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TRAINING REPORT

Fisheries Early Warning and Emergency Response (FEWER)

Training Report: Fisheries Early Warning and Emergency Response (FEWER)

Prepared by:
ICT4Fisheries Consortium
Consultants,

under contract through the Marine sub-component of the Investment Plan for the Caribbean Regional Track of the Pilot Program for Climate Resilience, co-implemented by the Caribbean Regional Fisheries Mechanism (CRFM).

CRFM Secretariat
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TRAINING REPORT: FISHERIES EARLY WARNING AND EMERGENCY RESPONSE (FEWER)

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    b. Mr. Aldywn Ferguson, President of the Guoyave Fishermen Cooperative, and all those in other fisherfolk organisations enlisted by him to arrange with nominated FEWER public users to attend the Fishers' Training Workshop
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Abbreviations and Acronyms

CAP	Common Alerting Protocol
CCA	Climate Change Adaptation
CDEMA	Caribbean Disaster Emergency Management Agency
CIF	Climate Investment Funds
CIMH	Caribbean Institute for Meteorology and Hydrology
CNFO	Caribbean Network of Fisherfolk Organizations
CRFM	Caribbean Regional Fisheries Mechanism
DOM	Dominica
DRM	Disaster Risk Management
EAF	Ecosystem Approach to Fisheries
FAD	Fish Aggregating Device
FEWER	Fisheries Early Warning and Emergency Response
GND	Grenada
ICT4D	Information and Communication Technology for Development
IDB	Inter-American Development Bank
MORI	Mona Office of Research and Innovation
MoU	Memorandum of Understanding
NEMO	National Emergency Management Organisation
NFO	National Fisherfolk Organization
PFO	Primary Fisherfolk Organization
PGIS	Participatory Geographical Information Systems
PPCR	Pilot Programme for Climate Resilience
SLU	Saint Lucia
SVG	St. Vincent and the Grenadines
URL	Uniform Resource Locator

Executive Summary

FEWER training aims to enable users to utilize the FEWER mobile application and web dashboard to help reduce risks related to weather (short-term) and climate (long-term) in fisheries. FEWER users are classified as administrators and public users. FEWER administrators are in turn classified as global administrators, regional reviewers, technical administrators, country administrators, agency administrators and the Coast Guard (also known as marine police in some jurisdictions). FEWER public users are primarily fishers but may include fisheries extension officers, national fisherfolk organizations and primary fisherfolk organizations. Users of all classifications participated in the training activities.

The FEWER training programme comprised four components: remote co-design meetings via Skype and Zoom; remote chat groups for different user classes, face to face training workshops, and training resources available through both the mobile application and web dashboard. Multiple delivery modes were employed to increase time on task and provide rich opportunity for engagement. The remote sessions in particular were designed as programmes of co-design meetings over months for fishers and weeks for administrators. Multi-stakeholder co-design ensured fitness for purpose of the FEWER solution as well as module-by-module supervised practice, both critical centre points of FEWER training.

Face to face workshops were planned for all project territories: Dominica, Grenada, Saint Lucia and St. Vincent and the Grenadines. However following the devastation of Hurricane Maria in Dominica, it was agreed that Dominica representatives would attend face to face training in St. Vincent and the Grenadines. So in the end, events were held in Grenada, Saint Lucia, and St. Vincent and the Grenadines. In total, 120 FEWER users were trained: 57 administrators, and 63 fisherfolk and extension officers.

All surveyed participants in the fishers' training workshops viewed all aspects of the training: training sessions, mobile phone tips discussions, trainers, venues and refreshments, as acceptable or better. All surveyed participants in the administrator's training workshops were at least satisfied with all aspects of the training.

Workshop exit surveys for fishers and administrators were used to gauge their understanding and recall of the training content. This feedback reveals areas for greater emphasis in future FEWER training. Most particularly, the workshop evaluations and observations revealed that there were six unique instances of mismatching modules across all surveyed participants. Future training should therefore better emphasize the distinction between modules, especially Emergency Procedures and Local Ecological Knowledge (LEK).

While there is room for improvement, participants have heaped praises not only for the execution of the workshops but also for the application. Joe Dublin, during a discussion amongst participants in the workshop was heard to exclaim, *"I'm very excited! Fishers will love this!"* Also, Asha Stewart via a Whatsapp group message wrote, "*Yeh, this is a very good thing. I know every one benefited a lot. So congrats.*"

1. Introduction

Fisheries Early Warning and Emergency Response (FEWER) is being implemented under the Caribbean Regional Track of the Pilot Programme for Climate Resilience (PPCR)[1] from February 2017 to May 2018. As a programme of the Climate Investment Funds (CIF)[1], the PPCR helps developing countries integrate climate resilience into development planning and investment. It comprises 28 national programmes and two regional tracks (the Caribbean and the Pacific) across the developing world. The CIF, through the Inter-American Development Bank (IDB)[2], has provided grant funding to implement the Caribbean Regional Track. Under the marine sector subcomponent, the CRFM is working to reduce the impact of climate change related risks on the fisheries industry in the Caribbean.

Alongside the development of FEWER for each of the four project countries: Dominica, Grenada, Saint Lucia and St. Vincent and the Grenadines, a multi-modal training programme was designed and implemented. This document primarily reports on the face to face workshop component though Section 2 provides a brief overview of all components. Section 3 provides a more detailed breakdown of the face to face training workshops including proposed support beyond the workshops and a resource for logistical planning of future training efforts as a gauge of the overall effort required. The assessment of users' responses from the face to face training workshops are explored and summarised in Section 4.
Finally, Section 5 provides a brief introduction into the impact assessment.

[1] https://www.climateinvestmentfunds.org/fund/pilot-program-climate-resilience
[2] http://www.iadb.org/en/inter-american-development-bank,2837.html

2. Training Methodology

The goal of FEWER training was to enable FEWER users to utilize the FEWER mobile application and web dashboard to help reduce risks related to weather (short-term) and climate (long-term) in fisheries sector in the Caribbean.

The training programme comprised four components: remote co-design meetings, remote chat group, face to face workshops, and training resources. Multiple delivery channels were employed to increase time on task and provide rich opportunity for engagement.

2.1 Remote Co-design Meetings

As a tool for fishers, FEWER functional and usability features were aligned with fishers' needs and circumstances. In particular, all stages of the application development lifecycle (requirements specification, design, implementation and testing) involved the active participation of fishers. A FEWER Fishers co-design team, established after stakeholder consultations in each project country, comprised fishers from all countries. The training methodology applied within this team employed inquiry-based learning, experiential learning and supervised practice.

Regularly scheduled co-design sessions were arranged to consider the FEWER prototype modules, one by one. The co-design sessions were conducted using Skype. This facilitated voice communication and screen sharing of pre-training content. FEWER fishers used the prototype modules on their own phones during the sessions. They shared their impressions, provided insights and directed improvements and recommendations for each module and the application suite as a whole. This engagement also enabled trainers to become familiar with a sample audience and to appreciate which features were most important to them. The trainers adjusted training content and delivery strategies in accordance with the findings of each session. See Appendix A for the schedule of meetings, as well as members of the co-design team.

Though fishers are the primary users of FEWER, the application requires administration by national agencies in fisheries, disaster management and hydro-meteorology. Co-design sessions were also conducted with FEWER administrators. Zoom meeting software was used as it offers greater stability and quality as well as a very useful recording feature.

2.2 Remote Chat Group

Between Skype meetings, trainers provided support to fishers via a FEWER Fishers WhatsApp group. In this group chat, real-life experiences and suggested improvements, amongst other things, were shared. The training methodology employed was the establishment and support of a community of practice amongst FEWER fishers.

2.3 Face to Face Training Workshops

Figure 1 Face to Face Fishers' Training Workshop held in Saint Lucia

The face to face training workshops were designed to give a larger group of users an introduction to, as well as guided hands-on experience using the FEWER application. These training workshops were delivered over two days in each designated country: one day for public users, mainly fishers; and the other for administrators. Figure 1 shows a FEWER trainer introducing the FEWER application to public users in the fishers' training workshop held in Saint Lucia. Presentations, demonstrations, hands-on exercises and discussions were conducted, as appropriate, to achieve specified learning objectives.

2.4 Training Resources

Training resources are available to FEWER users in the form of manuals for public users and administrators. These are accessible through the mobile application and administrator dashboards, respectively. The FEWER Fishers WhatsApp chat group is also still active as a channel for support, notifications and other forms of relevant information sharing.

3. Face to Face Training Workshops

The face to face training workshops were designed for the FEWER users to be able to quickly understand and use the application. Each workshop was executed within the limited time of a working day for each group of public users and administrators.

These workshops were proposed to be executed in each of the four countries: Dominica, Grenada, Saint Lucia, St. Vincent and the Grenadines. Around 18th September, 2017, Dominica was devastated by a Category 5 Hurricane Maria. The ICT4Fisheries training team, after considering Dominica's tragedy and reconstruction efforts, suggested that we invite key users for the roles of FEWER administrators to a training workshop held in one of the other territories. In consultation with MORI and CRFM, these nominated administrators were invited and participated in the training workshop held in St. Vincent and the Grenadines.

3.1 Objectives

The specific objectives for the face to face training workshops were that users understand what risks FEWER can help reduce, how FEWER helps reduce these risks and what role the user plays in reducing these risks using FEWER.

In FEWER, there are two main categories of users: the public users, who are mainly fishers, and the administrators. The public users were trained to use the FEWER Android mobile application while administrators were trained to use the web dashboard via a web browser on a laptop. For these face to face training workshops, the following learning outcomes were used to assess whether training objectives were met:

1. The FEWER administrators should be able to:
    a. explain the purpose of FEWER
    b. describe the role of their agencies in FEWER operations
    c. navigate their dashboard to locate all role-related functions
    d. use their dashboard to perform management tasks
2. The FEWER users (fishers) should be able to:
    a. explain the purpose of FEWER
    b. recall the agencies which use FEWER
    c. identify each FEWER module and its icon
    d. match FEWER modules to each phase of the disaster management cycle
    e. use FEWER modules to perform a set of tasks.

The administrators' training activities, which were aligned to their learning outcomes, are shown in Table 1.

Table 1 Administrators' Training Workshop Activities

TIME	ACTIVITY
8:30 am	**Welcome**
8:45 am	Introduction to FEWER
9:15 am	FEWER walk-through
9:45 am	Hands-on activity with web-based dashboard & resources
10:15 am	**Snack Break**
10:30 am	Hands-on FEWER administrative tasks: all
12:30pm	Evaluation: regional, country and agency admins
12:45 pm	**Lunch Break**
1:30 pm	Hands-on FEWER administrative tasks: coast guard & tech admins
2:30 pm	Discussion
3:00 pm	**Drinks Break**
3:15 pm	Hands-on FEWER administrative tasks: tech admins
4:15 pm	Hands-on evaluation: tech admins
4:30 pm	**End of workshop**

The fishers' training activities, which were aligned to their learning outcomes, are shown Table 2.

Table 2 Fishers' Training Workshop Activities

TIME	ACTIVITY
8:00 am	Registration and phone check
8:30 am	Welcome
8:45 am	Introduction to FEWER
9:15 am	Hands-on activity with mobile phone
9:45 am	**Snack Break**
10:00 am	FEWER walk-through
10:30 am	Hands-on FEWER activities
12:00 noon	Discussion
12:15 pm	**Lunch Break**

1:00 pm	Practice using FEWER app
3:45 pm	Discussion
4:00 pm	**Drinks Break**
4:15 pm	Practical tips on mobile phones
4:30 pm	Evaluation
5:00 pm	End of Workshop

The FEWER training workshop materials used in and to support the training workshops' activities are available in Appendix B.

3.2 Schedules

The training schedule for these workshops is shown in Table 3. The administrators' training workshops were conducted on Wednesdays and the fishers' training workshops were conducted on Thursdays.

Table 3 FEWER Training Workshops Schedule

Country	Training Dates		Venue
	Administrator	User (Fisher)	
Grenada	Wednesday 21st February, 2018	Thursday 22nd February, 2018	Fisheries Division, Melville Street, St. George's
Saint Lucia	Wednesday 28th February, 2018	Thursday 1st March, 2018	Department of Fisheries, Castries, Saint Lucia
St. Vincent and the Grenadines	Wednesday 7th March, 2018	Thursday 8th March, 2018	Fisheries Division, Kingstown

The target participants for the administrators' training workshops are shown in Table 4. The target participants for the fishers' training workshops are shown in Table 5.

Table 4 Target Participants of Administrators' Training Workshops

FEWER Role	Participant Agencies
Global Administrator	Caribbean Disaster Emergency Management Agency (CDEMA)
Regional Administrator	1. Caribbean Regional Fisheries Mechanism (CRFM) 2. Caribbean Institute for Meteorology and Hydrology (CIMH) 3. Caribbean Network of Fisherfolk Organizations (CNFO)
Technical Administrator	Information Technology unit
Country Administrator	Fisheries authority
Agency Administrator	1. Meteorological services 2. Disaster management agency 3. Fisherfolk organizations
Coast Guard	Coast Guard / Police Marine Unit

Table 5 Target Participants of Fishers' Training Workshops

FEWER Role	Participant Agencies
Public user	1. Fishers 2. Fisheries extension officers 3. National fisherfolk organization (NFO) 4. Primary fisherfolk organizations (PFOs)

3.3 Participants

In total, 120 FEWER users were trained: 57 administrators and 63 fisherfolk and fisheries extension officers, in Grenada, Saint Lucia and St. Vincent and the Grenadines. In Grenada, 16 administrators and 25 fisherfolk were trained. See Appendix C.1 for more information about participants who were trained in Grenada. In Saint Lucia, 15 administrators and 18 fisherfolk and fisheries extension officers were trained. See Appendix C.2 for more information about participants who were trained in Saint Lucia. In St. Vincent and the Grenadines, 26 administrators and 20 fisherfolk and fisheries extension officers were trained. See Appendix C.3 for more information about participants who were trained in St. Vincent and the Grenadines.

3.4 Support Beyond Workshops

Continued support for FEWER workshop participants, through country-specific WhatsApp chat groups, was offered. Table 6 lists the access URLs for each of these. In addition, links to FEWER manuals for administrators and public users were provided for self-help. These links are available, within the FEWER mobile application for the public users, and within the FEWER web dashboard for the administrators.

Table 6 URLs to access FEWER Support via WhatsApp

FEWER Group	WhatsApp Chat Group URL
Grenada FEWER Administrators	https://tinyurl.com/FEWERadminsGND
Saint Lucia FEWER Administrators	https://tinyurl.com/FEWERadminSLU
St. Vincent and the Grenadines FEWER Administrators	https://tinyurl.com/FEWERadminSVG
Grenada FEWER Fishers	https://tinyurl.com/fewerGND
Saint Lucia FEWER Fishers	https://tinyurl.com/fewerSLU
St. Vincent and the Grenadines FEWER Fishers	https://tinyurl.com/fewerSVG

3.5 Logistics

There were many persons critical to planning and arranging logistics at different stages, pre-arrival as well as in country, for the training workshops. These key persons also facilitated necessary modifications in-country.

3.5.1 Key Resource Persons

The key resource personnel who facilitated the considerable logistical arrangements for the training workshops are listed in Table 7. Many assisted in organising the schedules, venues, catering, travel and accommodation, among other items.

Table 7 Key Support Persons

Assistance	Personnel	Organisation
Contacted administrators for nominations and confirmations	Dr. Susan Singh-Renton Mr. Kevon Andrews Dr. Patrick McConney Ms. Amanda Suraj	CRFM Secretariat ICT4Fisheries Consortium ICT4Fisheries Consortium ICT4Fisheries Consortium
Contacted fishers' representatives for nominations and confirmations	Mr. Kevon Andrews Ms. Nadine Nembhard Ms. Amanda Suraj	ICT4Fisheries Consortium ICT4Fisheries Consortium ICT4Fisheries Consortium
Followed up with administrators regarding participation (Grenada)	Mr. Crafton Isaac	Fisheries Division
Followed up with fishers regarding participation (Grenada)	Mr. Aldwyn Ferguson	Gouyave Fishermen Cooperative
Followed up with administrators regarding participation (Saint Lucia)	Ms. Yvonne Edwin	Department of Fisheries
Followed up with fishers regarding participation (Saint Lucia)	Ms. Yvonne Edwin Mr. Alva Lynch	Department of Fisheries Castries Fisher-folk Cooperative Society Ltd.
Followed up with administrators regarding participation (St. Vincent and the Grenadines)	Mr. Lorenzo George	Fisheries Division
Followed up with fishers regarding participation (St Vincent and the Grenadines)	Mr. Lorenzo George Mr. Winsbert Harry	Fisheries Division Goodwill Fisherman Cooperative; National Fisherfolk Organisation

3.5.2 Pre-arrival Logistics

Table 8 lists the different elements considered in the logistical planning for FEWER training workshops and the details and issues involved in arranging these elements.

Table 8 Pre-arrival Logistics

Elements	Criteria	Requirements
Accommodation	Location	In walking distance of venue
	Room Availability	Where necessary, late checkout in the evening
Catering	Capacity	Max. 33 in for public users & max. 20 for administrators
	Advanced Quotes	Used to negotiate meal options within estimated budget
Transportation	From & to ports	Where necessary, arrangements with the Fisheries Authority or CRFM to provide transportation for trainers as well as visitors to in-country training
	Return journey to venue	Fishers were provided with a travelling allowance to cover transportation costs
Travel	Dates from host countries	Two dates suggested for each country with confirmation required from the Fisheries Authority

	Flights	Arrive the day before and leave on earliest flight after 8 p.m. and if not possible, on the next available flight on the next day
	Ferries	Arrive the day before and leave on earliest sailing after training is completed for visitors from neighbouring islands
Venue	Seating	33, classroom style
	Internet	WiFi connection for up to 33 users
	Presentation	Multimedia projector and screen
	Meals & Refreshments	Meals and refreshments according to the schedule in agendas as well as the opportunity to call 2 hours in advance to confirm quantity
Training materials	Printed agendas	Printed to distribute to the maximum number of participants and trainers
	Printed evaluation forms	Printed to distribute to the maximum number of participants
	Printed attendance sheets	Printed to distribute to each of the 6 workshops
	Online exercises	Create and provide a simple and unique URL to each online exercise for each country

3.5.3 In country Logistics

In-country logistics, summarized in Table 9, covers every task that related to organising the training workshops from time of arrival to the end of the last day of training and reporting on this training. It was mostly spread over three days.

Table 9 In-country Logistics

Day	Purpose	Activities
Day 1	Final preparations for training workshops - Funds	1. Confirmed that the money transferred was received 2. Collected funds transferred via Western Union into country
	Final preparations for training workshops – Room setup	3. Met with the FEWER local support who is based at the fisheries authority 4. Arranged meeting room with classroom style seating for a maximum of 30 seats
	Final preparations for training workshops – Caterers	5. Arranged with caterer to organize quantity of meals and refreshments to be delivered
Day 2	Final preparations for training workshops - Funds	1. If necessary, visited the bank to get the smaller denominations of currency as this was needed to distribute allowances to fishers on the 2nd day of training workshops
	Administrators' Training Workshop - Registration	2. Registration of the administrators which included: a. Name tag creation b. Attendance sheet signing c. Meal options selection 3. Laid out the agendas on the tables where the

		participants will sit
	Administrators' Training Workshop – Caterers	4. Arranged with caterer to organise quantity of meals and refreshments to be delivered 5. Managed the distribution of the selected meals and refreshments 6. Paid the caterer on collection of all invoices or receipts 7. Purchased drinks and a small snack for afternoon break
	Administrators' Training Workshop – Wrap up	8. Distributed the evaluation forms with pencils, as well as provide guidance and finally collect these forms 9. Cleaned up of the meeting room and arrange meeting room with classroom style seating for fishers' training
	Final preparations for training workshops – Travel Re-imbursements	10. Provided any reimbursement of return travel costs, per diems and assistance required with finalising hotel accommodation to fishers visiting another island for training 11. Collected all evidence of travel (boarding passes, etc.) and signed receipts for receiving per diems
Day 3	Fishers' Training Workshop - Registration	1. Registration of the fishers which included: a. Name tag creation b. Attendance sheet signing c. Phone details d. Meal options selection 2. Laid out the agendas on the tables where the participants will sit
	Fishers' Training Workshop - Catering	3. Arranged with caterer to organize quantity of meals and refreshments to be delivered 4. Distributed meals and refreshments
	Fishers' Training Workshop – Wrap-up	5. Filled out forms for signatures of participants receiving allowances 6. Arranged the labelled envelopes for the fishers' allowances 7. Handed out the evaluation forms with pencils collected the forms 8. Distributed allowances and obtained all fishers' signatures 9. Cleaned up of the conference room, as well as rearranged the tables and chairs in the default arrangement

3.5.4 Modifications to Logistics

Some of the team's expectations for the training workshops did not materialise so adjustments were required. These are summarized in Table 10.

Table 10 Training Workshop Planning Experiences

	Expectations during Planning	Modifications to Expectations
Catering	To reduce costs, it was expected that caterers would be able to vary the numbers actually serve after 1st break to the numbers that show up on the day	Some caterers, for e.g. one in St. Lucia, requires a minimum number to serve
Fishers' outreach assistance	In all countries, the suggested fisherfolk organization representative was the only human resource required to contact and organize with fisherfolk across the country	In some countries, the suggested fisherfolk organization representative was sufficient but in others additional assistance was required from the fisheries authority representative
Funds available in country	The team expected: 1. that quotations from catering could be provided and then paid by US cheque when in country or 2. that EC dollars were available from T&T banks to take to country or 3. to use credit card for payments catering costs	As many did not have US accounts on which to cash US cheques or take credit cards, and the very limited availability of EC currency from banks in Trinidad and Tobago, another option of Western Union money transfers, which was more expensive, was used
Training team's in-country presence	Three members were expected to be in country, only when the number of participants for a session was greater than twenty, otherwise two members were expected	As there was an underestimation of the challenges to obtain US/EC currency and the additional logistical coordination required for the catering, it was proposed that a third trainer be in country a day before to arrange these matters before hand

4. Reaction and Learning Assessment

Training assessment often sets out to measure four (4) related dimensions:

1. reaction;
2. learning;
3. behaviour;
4. results / return on investment.

In the case of FEWER, the model is particularly significant. It readily accommodates the operating constraints of this Information and Communication for Development (ICT4D) pilot which introduces supporting tools and services into the existing operations of fishers and disaster management agents.
As the first cycle of face to face FEWER training, the sessions focused primarily on an orientation to the tool. Learners were asked to identify and describe very basic features, concepts and functions. Assessment then, within the project timeline, was deliberately constrained to a measurement of learners' reactions, as well as their immediate learning of the content knowledge shared during face to face demonstrations and workshops.

Reaction, in the Kirkpatrick Model (1955)[3], is a construct used to gauge the initial reaction of participants to training. In the case of FEWER training, it was used to assess the overall delivery of the workshop. This is typically intended to highlight a personal attitude or psychological response from the training participant in regard to: the quality of the location, facilities, facilitator, delivery, available resources etc. In the case of the FEWER workshops, reaction or "the degree to which participants found the training favourable, engaging and relevant to their jobs"[4], was reviewed along the following components:

1. FEWER training;
2. mobile phone tips;
3. trainers;
4. venue;
5. refreshments.

Participants paired each component to a distinguishable level of satisfaction on a Likert scale: very good, good, acceptable, not good and terrible.

Learning, in the Kirkpatrick Model, is a construct that can be used to measure information retention. It was directly related to the instructional content provided to learner-participants. In the case of the FEWER training, all instructional content was deliberately aligned to the stated learning outcomes (LOs) for each category of target audience. The learning outcomes, were necessarily lower-order LOs, and therefore do not go beyond the scope of "remembering" and "understanding"[5]. Learning or "The degree to which participants acquire the intended knowledge, skills, attitude, confidence and commitment based on their participation in the training" was reviewed via questionnaires distributed to administrators, as well as public users. Learning of FEWER-specific content has been tracked mostly in quantifiable terms. A matching activity was used to calculate how many participants selected correct answers versus how many did not at a particular time of training. This is noteworthy as responses were received almost immediately after the workshop. Figure 2 shows FEWER Participants providing information, using the appropriate evaluation form in Appendix D, for Reaction and Learning assessments. Using this information the team could measure and assess the effectiveness of the training.

[3] https://www.kirkpatrickpartners.com/Our-Philosophy/The-Kirkpatrick-Model

[4] https://www.kirkpatrickpartners.com/Our-Philosophy/The-Kirkpatrick-Model

[5] Anderson, L., Krathwohl, D., & Bloom, B. (2001). A taxonomy for learning, teaching and assessing: a revision of Bloom's taxonomy of educational objectives. New York: Longman.

Figure 2 FEWER Participants filling out Surveys capturing information related to Reaction and Learning

4.1 Assessment of Reaction

At each of the training workshops, evaluations were completed by the participants on hard copy forms. The following two sub-sections discuss the assessment of reaction according to the two main categories of users: administrators and public users, who were mainly fishers.

4.1.1 Assessment of Reaction for Administrators

The survey requested feedback to these statements below to measure the satisfaction of the attendees with the workshop:

A1. objectives of the workshop were clear
A2. content and detail were appropriate
A3. scenarios were relevant to their roles in FEWER
A4. hands-on activities helped consolidate understanding of FEWER and its operations
A5. trainers were effective
A6. venue was suitable
A7. break and lunch catering were adequate

Figure 3, Figure 4 and Figure 5 shows that while all the surveyed administrators do not disagree or strongly disagree with any of the statements listed in A1 to A7, some of the respondents provided neutral opinions given in the list below:

1. 1 out of 21 in St. Vincent and the Grenadines was neutral as it relates to the clarity of the objectives of the workshop;
2. 1 out of 14 in Saint Lucia was neutral as it relates to the appropriateness of the content and details presented in the workshop;
3. 2 out of 15 in Grenada, 3 out of 13 in Saint Lucia and 5 out of 23 in St. Vincent and the Grenadines were neutral as it relates to the relevancy of scenarios to their roles;

4. 1 out of 14 in Saint Lucia and 1 out of 22 in St. Vincent and the Grenadines were neutral as it relates to the use of the activities to help in consolidating the participants' understanding of FEWER and its operations;
5. 2 out of 23 in St. Vincent and the Grenadines were neutral as it relates to effectiveness of the trainers;
6. 2 out of 23 in St. Vincent and the Grenadines were neutral as it relates to suitability of the venue for the training workshop;
7. 1 out of 13 in Grenada and 3 out of 21 in St. Vincent and the Grenadines were neutral as it relates to adequacy of the catering for the workshop.

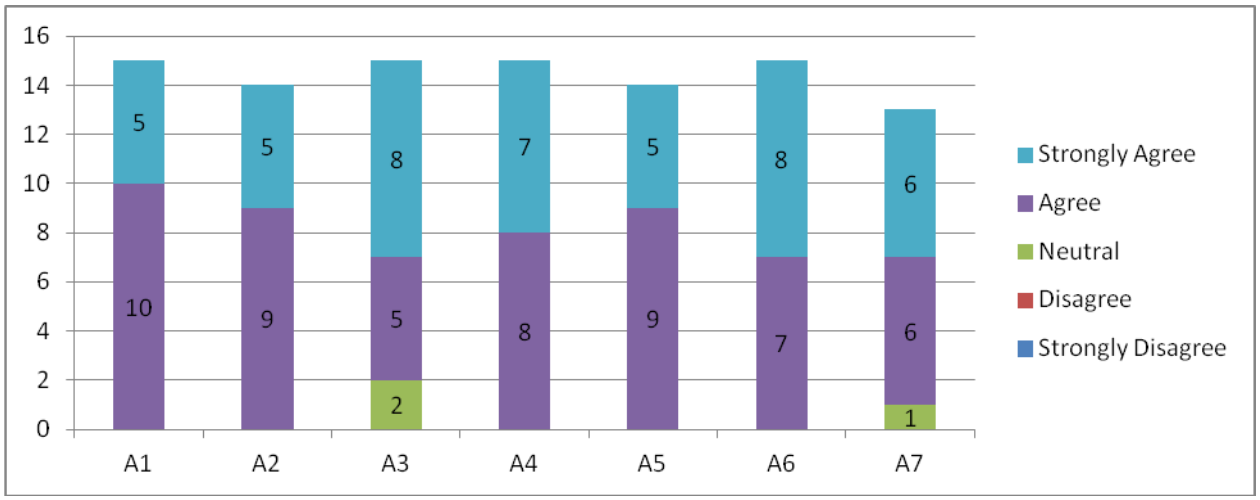


Figure 3 Administrators' responses to statements A1 to A7 in Grenada

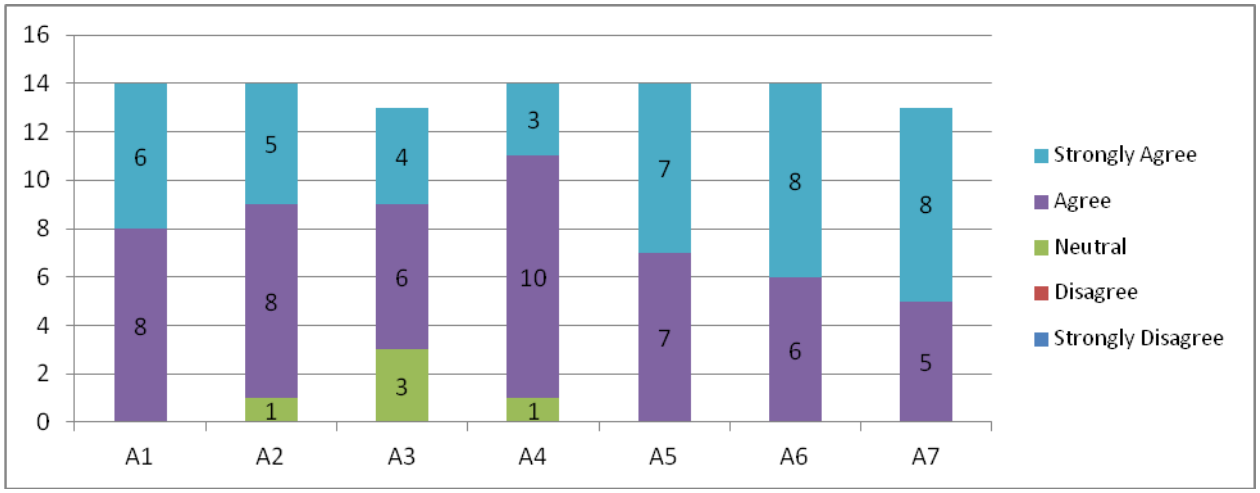


Figure 4 Administrators' responses to statements A1 to A7 in Saint Lucia

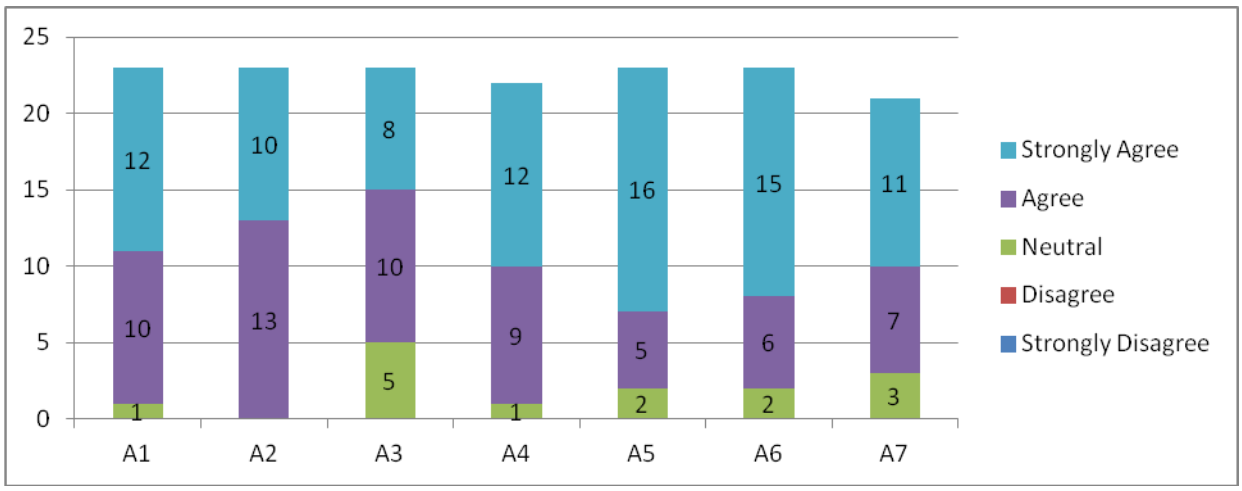


Figure 5 Administrators' responses to statements A1 to A7 in St. Vincent and the Grenadines

4.1.2 Assessment of Reaction for Public Users

Figure 6, Figure 7 and Figure 8 show that all surveyed participants in the fishers' training workshops viewed all the aspects of the training as acceptable or better. These aspects of the training workshops include:

A1. FEWER training sessions;
A2. Mobile phone tips demonstrations;
A3. Trainers;
A4. Venue;
A5. Refreshments.

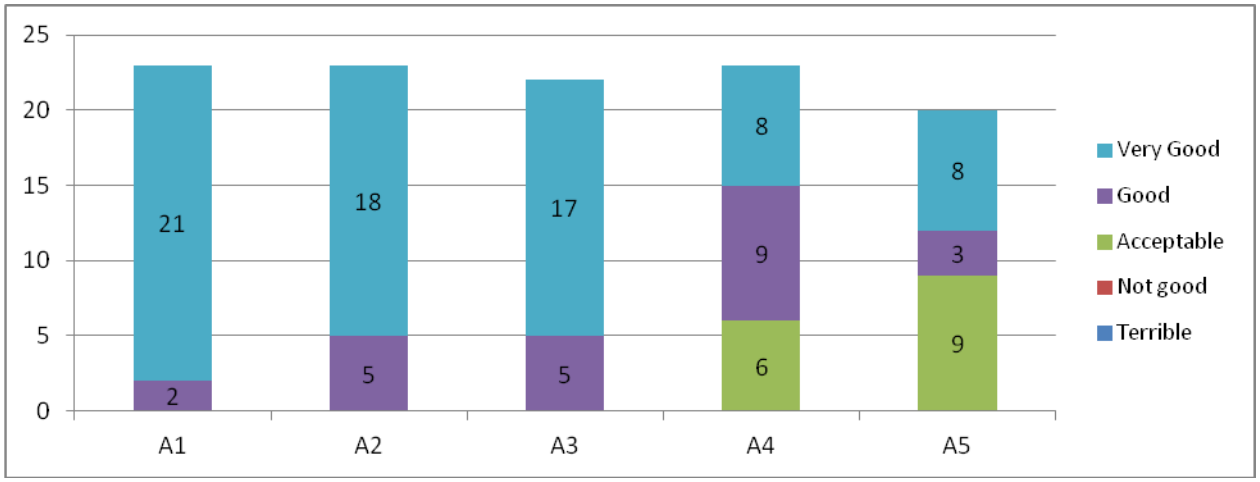


Figure 6 Public Users' responses to statements A1 to A5 in Grenada

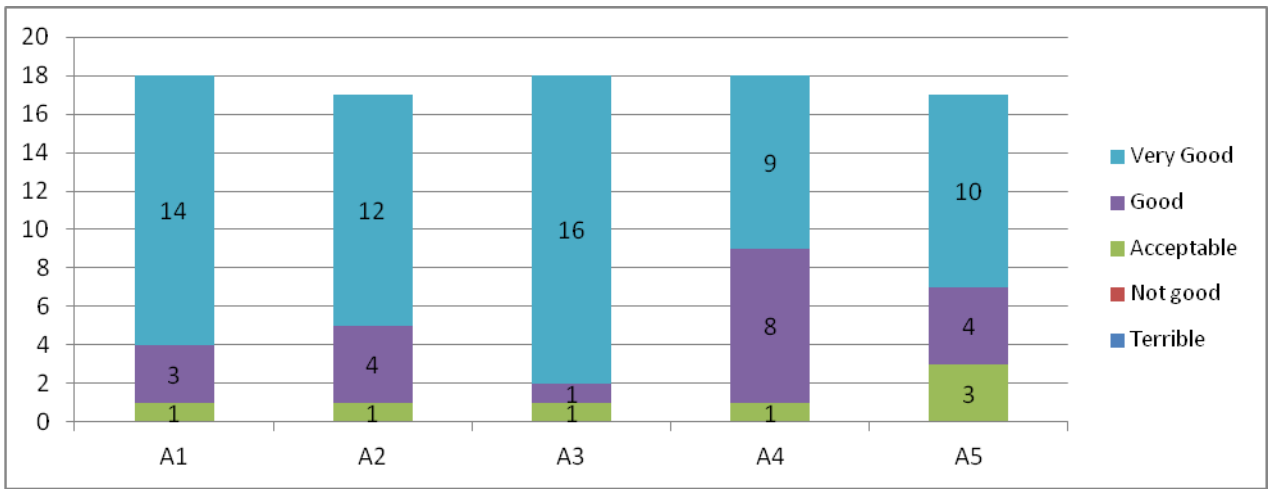


Figure 7 Public Users' responses to statements A1 to A5 in Saint Lucia

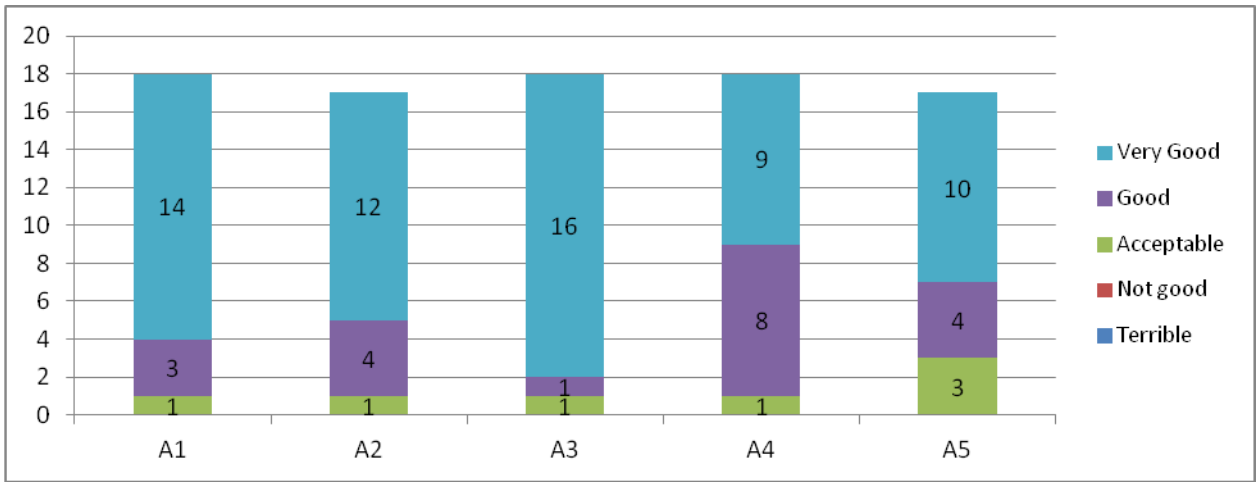


Figure 8 Public Users' responses to statements A1 to A5 in St. Vincent and the Grenadines

4.1.3 Remarks about Reaction Assessment

All surveyed participants in the fishers' training workshops viewed all aspects of the training: training sessions, mobile phone tips discussions, trainers, venues and refreshments, as acceptable or better. All surveyed participants in the administrator's training workshops were at least satisfied with all aspects of the training.

4.2 Assessment of Learning

The assessment of learning is directly mapped to the learning outcomes identified for each training workshop. The evaluation artefacts that are mapped to the learning outcomes are shown in Table 11.

Table 11 Mapping of Training Outcomes to Evaluation Artefacts

Administrators' Training Workshop Outcomes	Fishers' Training Workshop Outcomes	Evaluation Artefacts
1. explain the purpose of FEWER	1. explain the purpose of FEWER	1. Answered by responses associated with statements

		from the evaluation form labelled B1 to B5 in section 4.2.1
2. describe the role of their agencies in FEWER operations	2. recall the agencies which use FEWER	1. Admins - Answered by MoU responses 2. Trainer observations during hands-on activities
3. navigate their dashboard to locate all role-related functions	3. identify each FEWER module and its icon	1. Answered by responses associated with matching activity in the evaluation exercise 2. Trainer observations during hands-on activities
4. use their dashboard to perform management tasks	3. use FEWER modules to perform a set of tasks	1. Trainer observations during hands-on activities

4.2.1 Assessment on FEWER's Purpose

This assessment used the statements from the survey and labelled below as B1 to B4 or B5. The following two sub-sections split up the assessment of reaction according to the two main categories of users: administrators and public users, who were mainly fishers.

4.2.1.1 Assessment on FEWER's purpose as indicated by Administrators

Figure 9, Figure 10 and Figure 11, show how all surveyed participants responded for the following statements:

B1. FEWER meets all fishers' EW & ER needs associated with weather and climate
B2. FEWER reduces fishers' risks from weather- and climate-related hazards
B3. FEWER can operate within the national Disaster Risk Management framework
B4. FEWER provides all capabilities on all mobile devices that fishers use at land and sea

For B1 – "FEWER meets all fishers' EW & ER needs associated with weather and climate", in Saint Lucia, about 79% of surveyed administrators incorrectly answered. While of the surveyed administrators, 60% in Grenada and about 87% in St. Vincent and the Grenadines answered this correctly. For B2 – "FEWER reduces fishers' risks from weather- and climate-related hazards" and B3 –"FEWER can operate within the national Disaster Risk Management framework", more than 92% of surveyed administrators answered correctly. For B4 – "FEWER provides all capabilities on all mobile devices that fishers use at land and sea", more than 57% of surveyed administrators answered correctly.

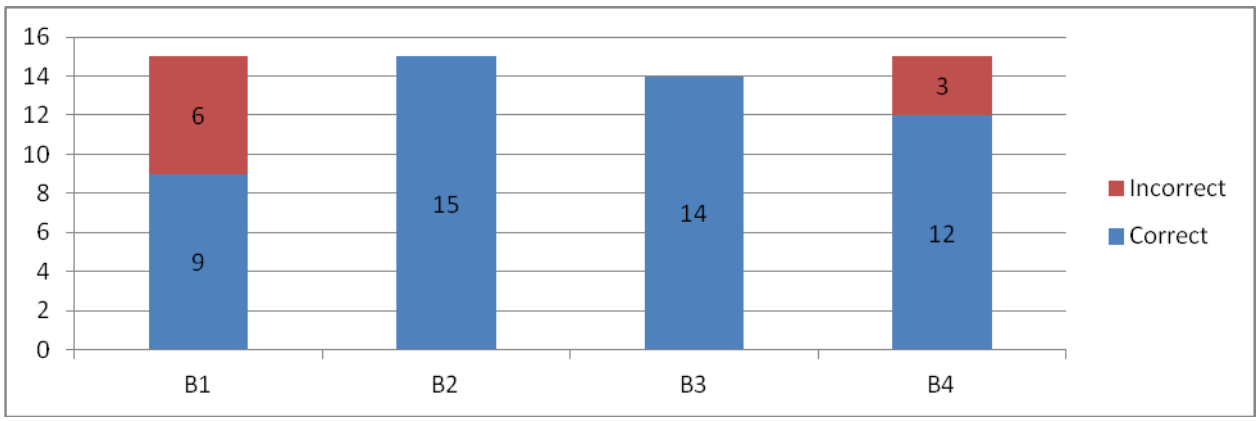


Figure 9 Administrators' responses to statements B1 to B4 in Grenada

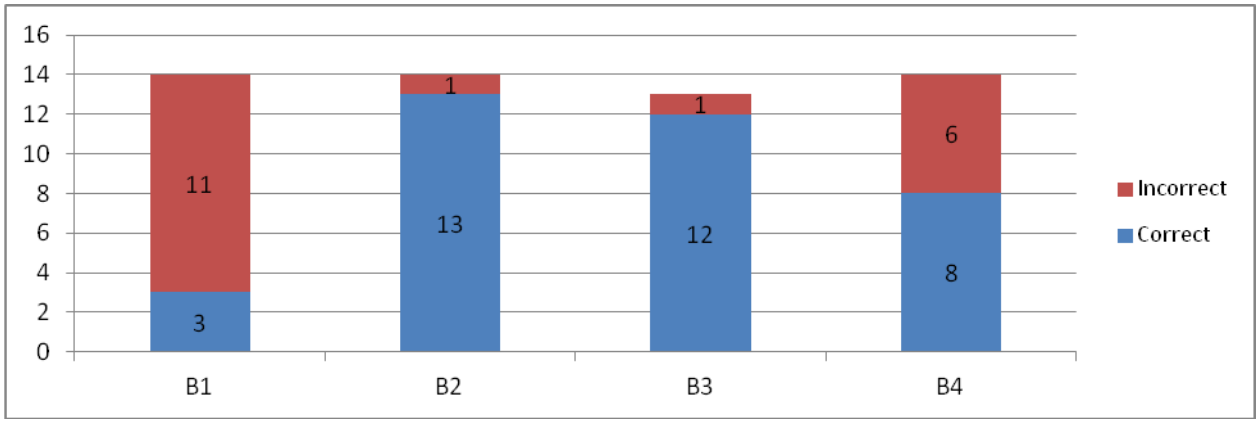


Figure 10 Administrators' responses to statements B1 to B4 in Saint Lucia

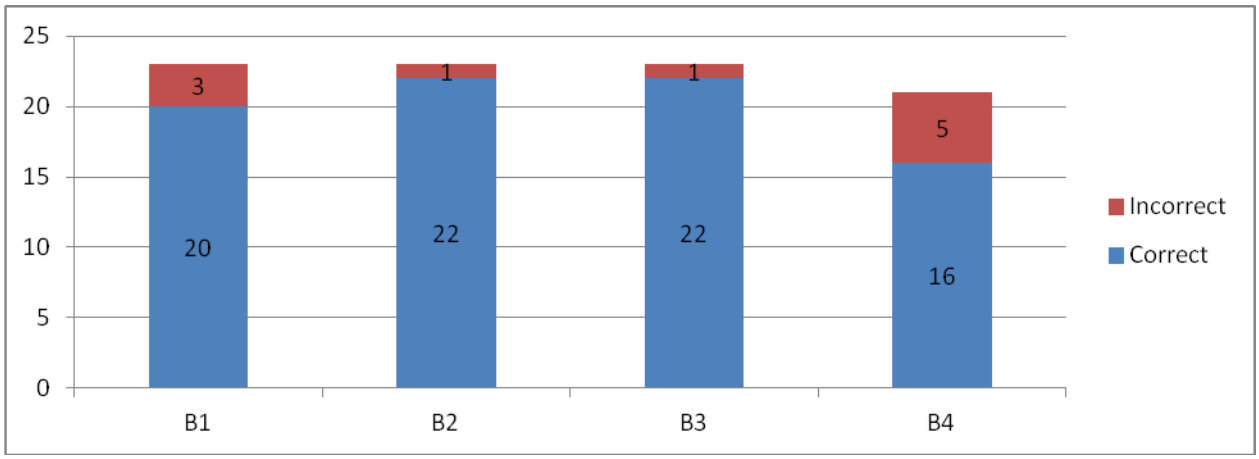


Figure 11 Administrators' responses to statements B1 to B4 in St. Vincent and the Grenadines

Disappointingly, many participants incorrectly assessed that "FEWER meets all fishers' EW & ER needs associated with weather and climate". The responses by all surveyed administrators for this statement recorded a 61.5% success rate, which was the lowest amongst all these statements.

4.2.1.2 Assessment on FEWER's Purpose as indicated by Public Users

Figure 12, Figure 13 and Figure 14, show the responses across the surveyed countries for the following statements and that the majority of the surveyed public users successfully answered these:

B1. FEWER meets all fishers' needs in bad weather or at sea
B2. FEWER reduces risks from bad weather at sea
B3. FEWER operates with national systems that help keep fishers safe
B4. FEWER works fully on all mobile devices that fishers use at sea or on land
B5. FEWER needs cell service or WiFi to send or receive information

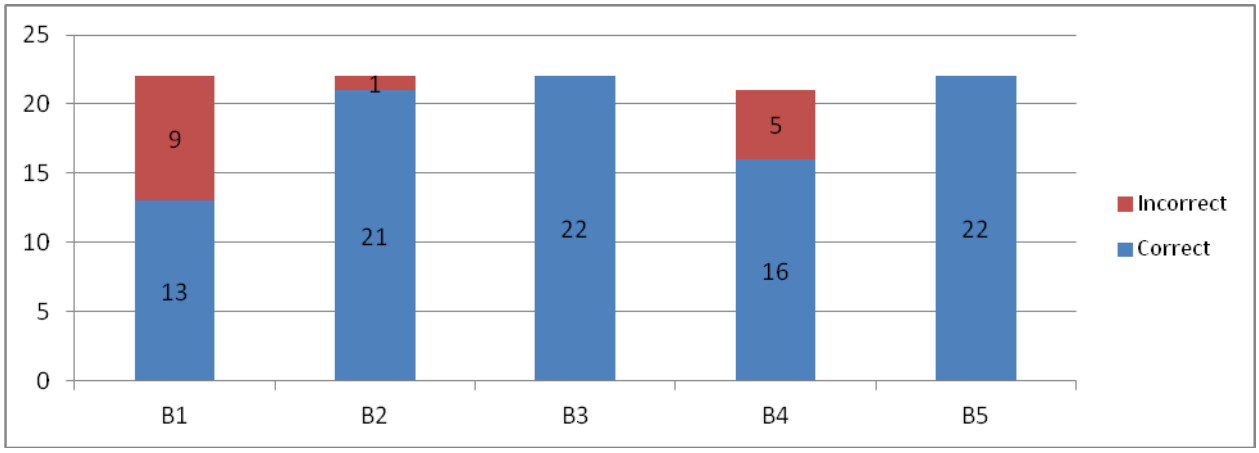


Figure 12 Public Users' responses to statements B1 to B5 in Grenada

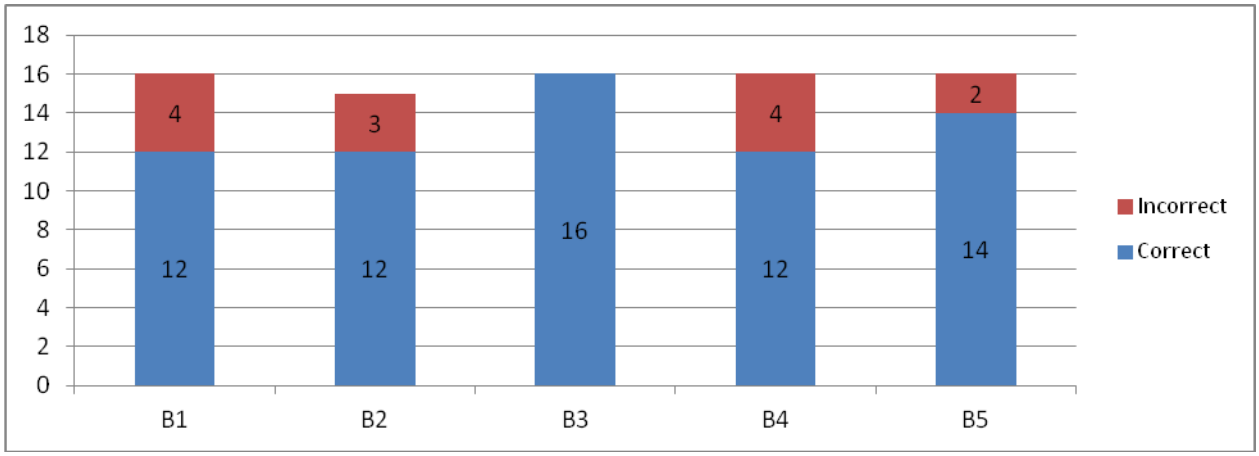


Figure 13 Public Users' responses to statements B1 to B5 in Saint Lucia

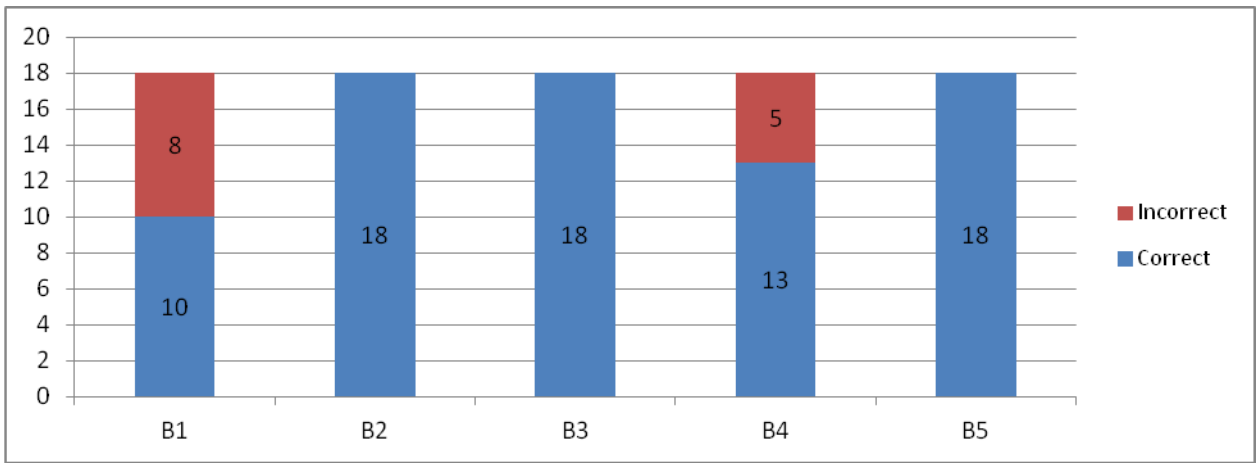


Figure 14 Public Users' responses to statements B1 to B5 in St. Vincent and the Grenadines

From these results, it can be deduced that the lowest successful response rate of 62.5% was associated with "FEWER meets all fishers' needs in bad weather or at sea".

4.2.2 Assessment on Identifying FEWER Modules, Icons and Role-related Functions

This assessment used the matching section from the survey. The following two sub-sections summarise the assessment of reaction according to the two main categories of users: administrators and public users, who were mainly fishers.

4.2.2.1 Assessment on Identifying FEWER Modules, Icons and Role-related Functions by Administrators

Figure 15, Figure 16 and Figure 17 show that of all the modules, Local Ecological Knowledge (LEK) was the least successful in being matched by surveyed administrators with a successful response rate of 47%.

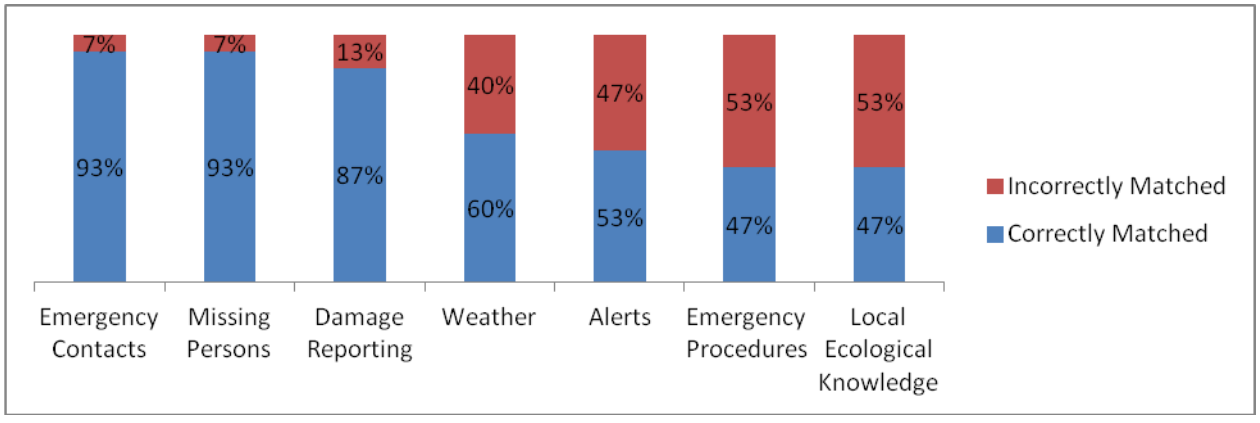


Figure 15 Modules Matched by Administrators in Grenada

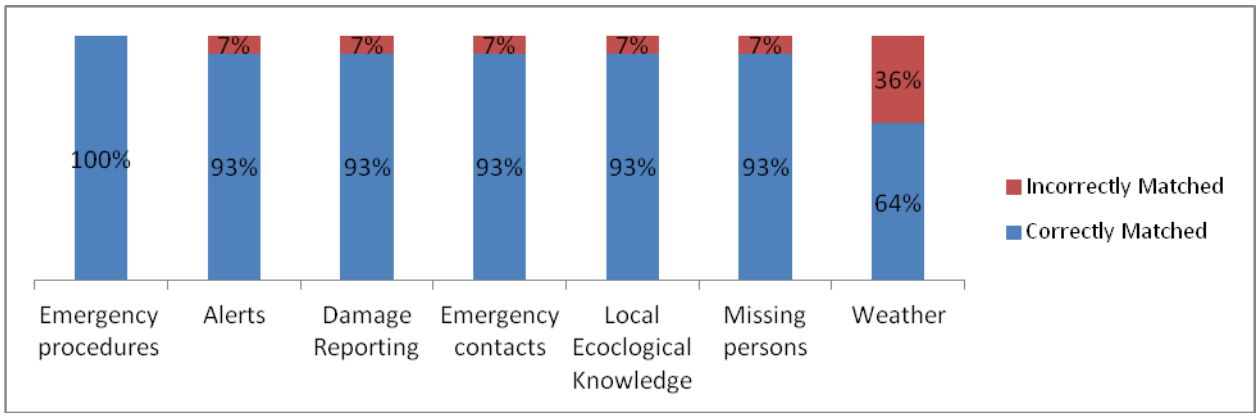


Figure 16 Modules Matched by Administrators in Saint Lucia

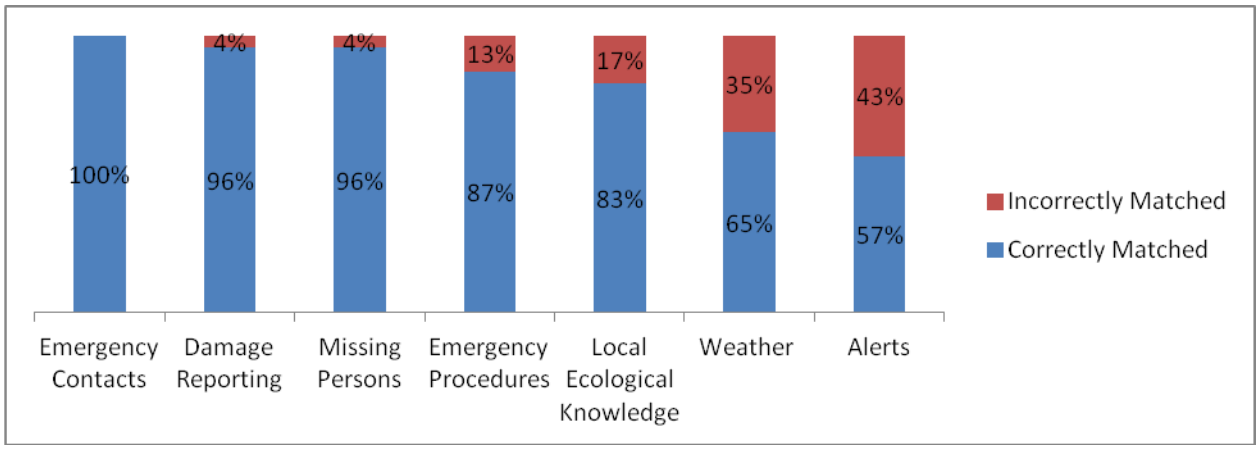


Figure 17 Modules Matched by Administrators in St. Vincent and the Grenadines

Incorrectly matched responses in Figure 15, Figure 16 and Figure 17 include responses in which no answers were provided as well as mismatched responses. While Figure 18, Figure 19 and Figure 20 shows the actual number and identifies the mismatched items. Figure 18 and Figure 20 show that in Grenada and the St. Vincent and the Grenadines there were several mismatches with the modules and their main features provided by the surveyed administrators. In Grenada, there were a total of 27 mismatches and in St. Vincent and the Grenadines there were a total of 20 mismatches. In Grenada, the surveyed administrators mostly mismatched Local Ecological Knowledge (LEK) for Emergency Procedures and vice versa, in addition to Weather for Alerts and vice versa. In St. Vincent and the Grenadines, the surveyed administrators mostly mismatched Local Ecological Knowledge (LEK) for Emergency Procedures, Damage Reporting for Local Ecological Knowledge, Weather for Alerts and vice versa. Figure 19 shows that in Saint Lucia the number of mismatches were the least, 4, with Alerts being mismatched for Weather by most surveyed administrators.

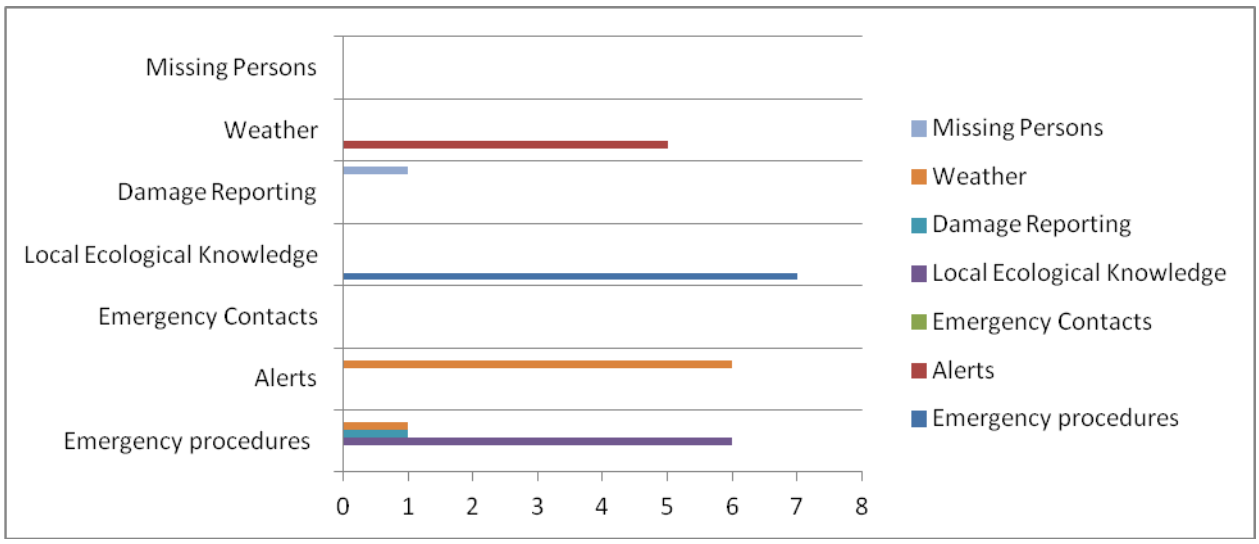


Figure 18 Number of administrators in Grenada incorrectly matching one module's feature as belonging to another module

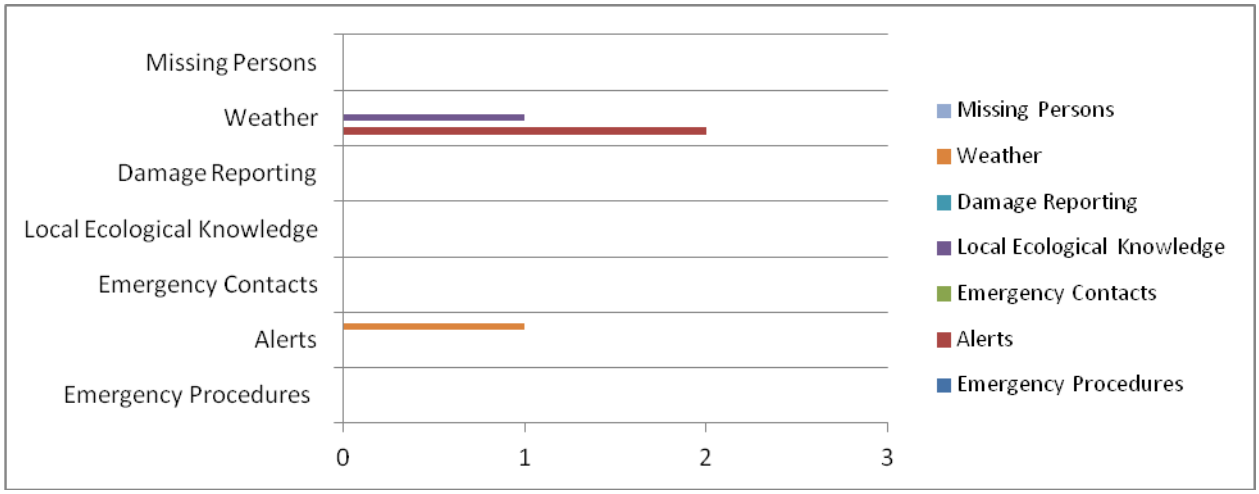


Figure 19 Number of administrators in Saint Lucia incorrectly matching one module's feature as belonging to another module

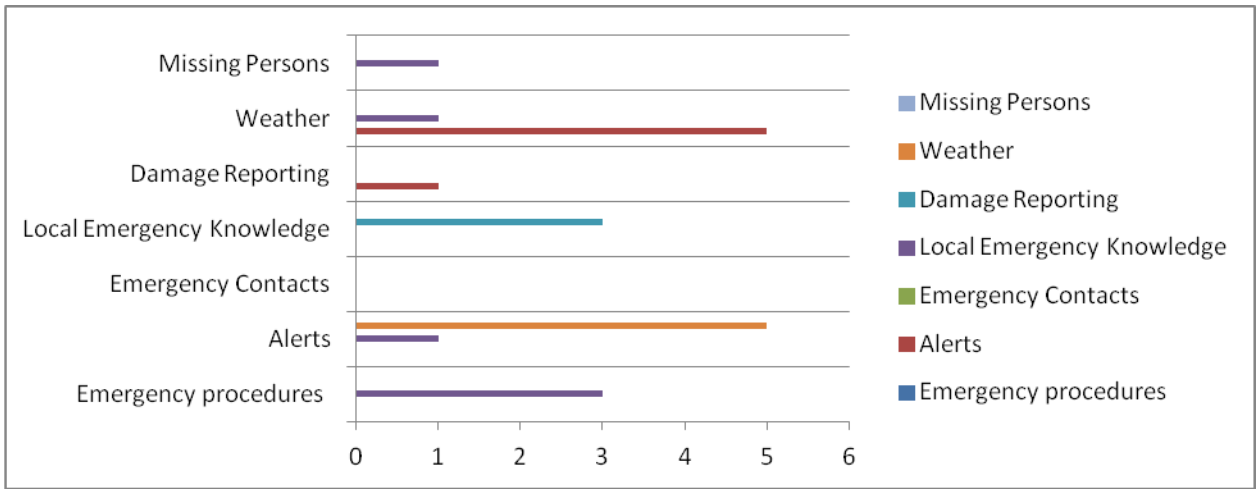


Figure 20 Number of administrators in St. Vincent and the Grenadines incorrectly matching one module's feature as belonging to another module

4.2.2.2 Assessment on Identifying FEWER Modules, Icons and Role-related Functions by Public Users

Figure 21, Figure 22 and Figure 23 show that of all the modules, Emergency Contacts had the least successful response rate of 68%.

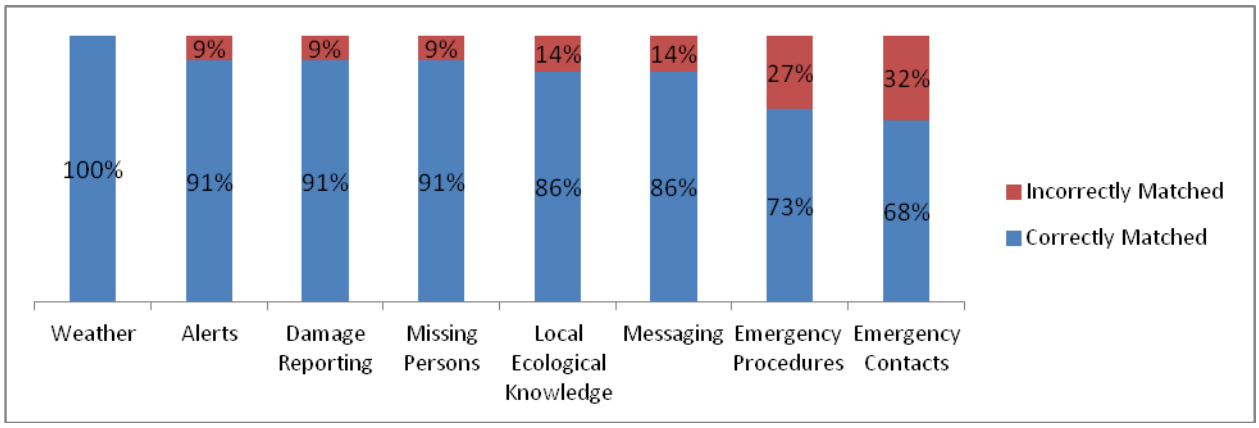


Figure 21 Modules Matched by Public Users in Grenada

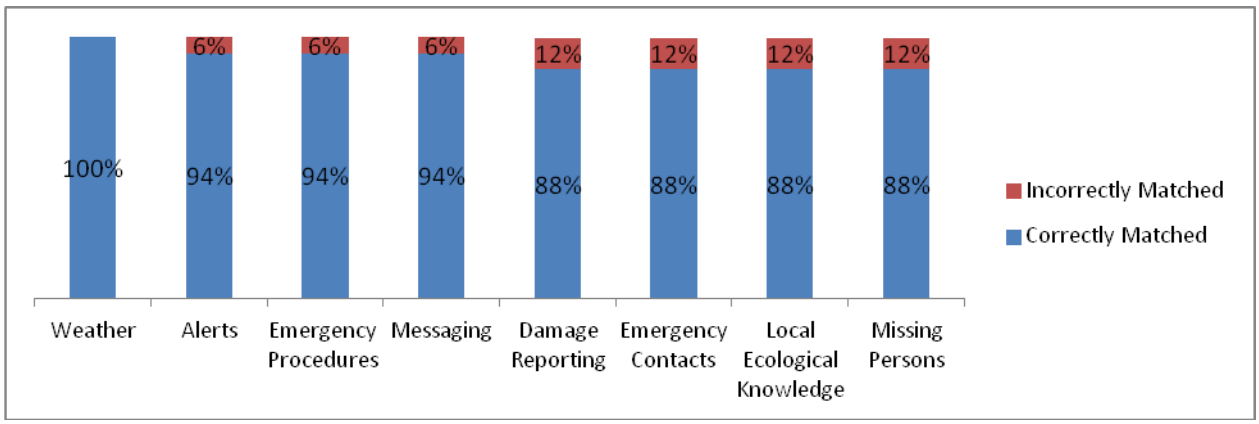


Figure 22 Modules Matched by Public Users in St. Lucia

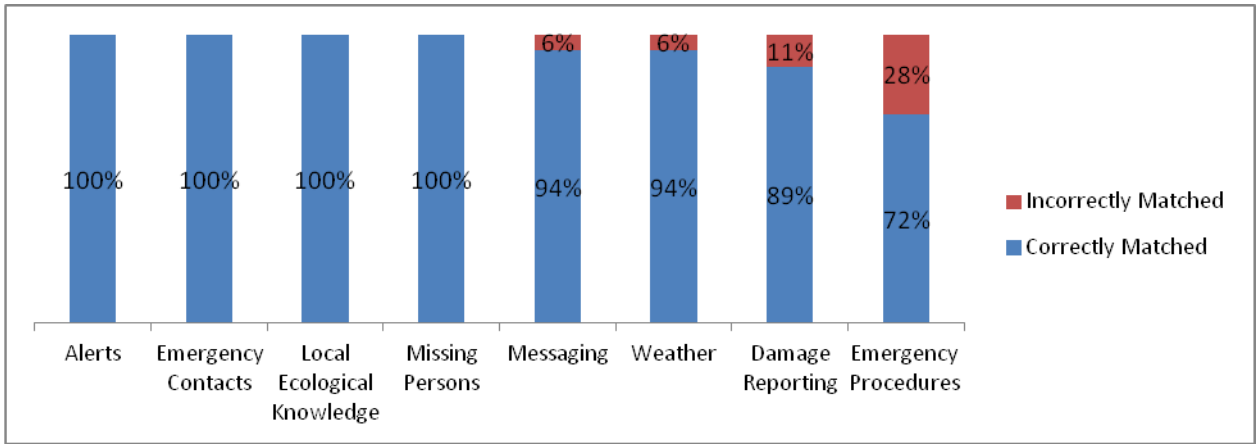


Figure 23 Modules Matched by Public Users in St. Vincent and the Grenadines

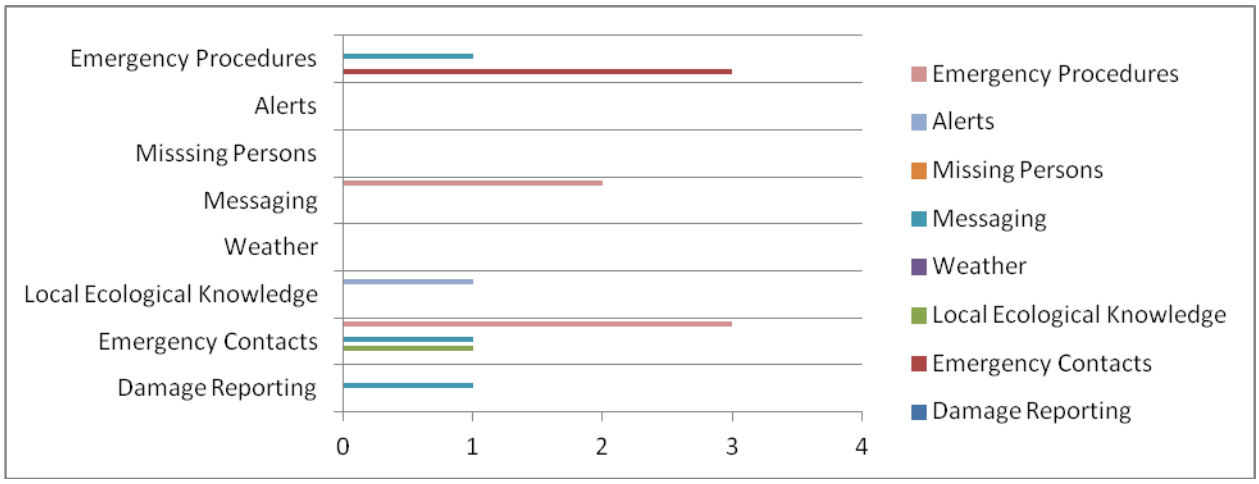


Figure 24 Number of public users incorrectly matching one module's feature as belonging to another module in Grenada

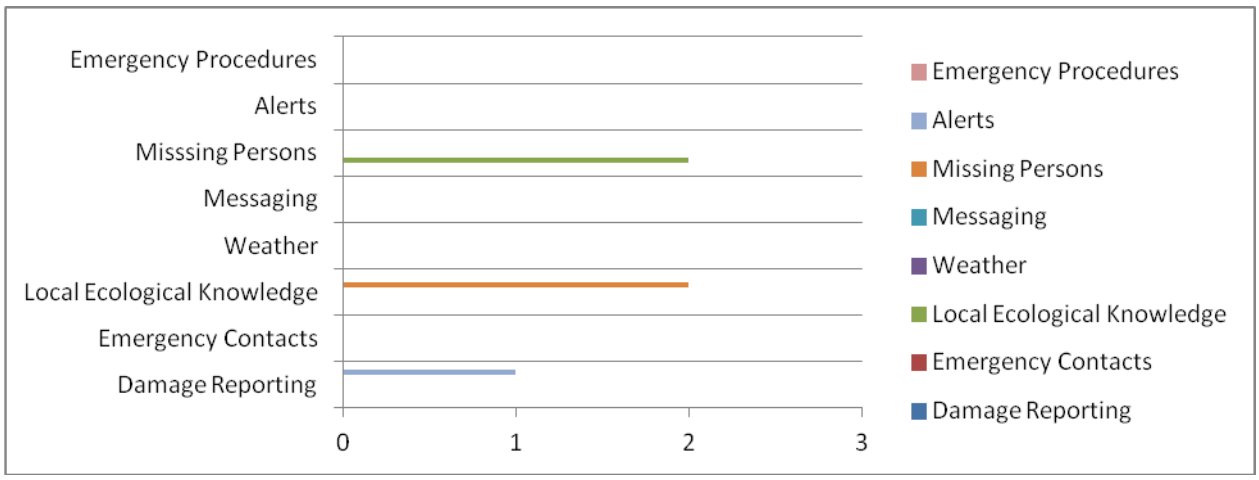


Figure 25 Number of public users in Saint Lucia incorrectly matching one module's feature as belonging to another module

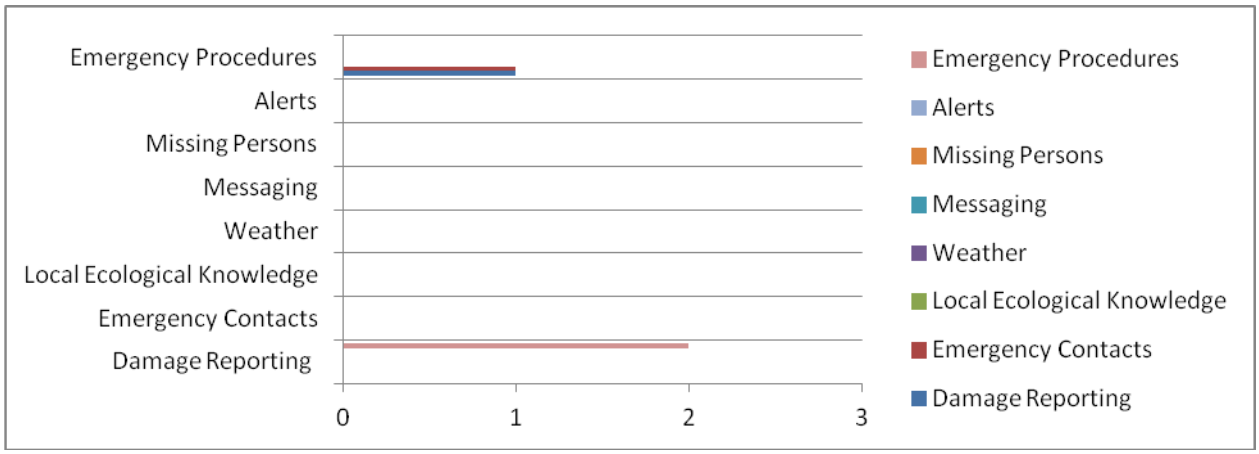


Figure 26 Number of public users incorrectly matching one module's feature as belonging to another module in St. Vincent and the Grenadines

Incorrectly matched responses in Figure 21, Figure 22 and Figure 23 include responses in which no answers were provided as well as mismatched responses. While Figure 24, Figure 25 and Figure 26 shows the actual number and identifies the mismatched items. Figure 24 shows that in Grenada, where the team's first training workshop was held, there were a lot of mismatches with the modules and their main features provided by the surveyed public users. Figure 25 and Figure 26 show that in the following training workshops held in Saint Lucia and St. Vincent and the Grenadines, the number of mismatches with the modules and their main features provided by the surveyed public users were greatly reduced from 13, in Grenada, to 5 in Saint Lucia and 4 in St. Vincent and the Grenadines.

In Grenada, the surveyed public users mostly mismatched Emergency Contacts for Emergency Procedures and vice versa. In Saint Lucia, Local Ecological Knowledge (LEK) was mismatched for Missing Persons and vice versa by most surveyed public users. In St. Vincent and the Grenadines, the surveyed public users mostly mismatched Emergency Procedures for Damage Reporting.

4.2.3 Assessment on FEWER Agencies and their Roles

A post-training survey was used to gauge agreement with the proposed administrators' responsibilities captured in the FEWER Memorandum of Understanding (MoU). See Appendix E.1 for an example of the

survey used in St. Vincent and the Grenadines. The information in Appendix E.2, Appendix E.3 and Appendix E.4 shows the original and newly introduced responsibilities of interest from the draft versions of the MoUs of three of the four territories of concern:

1. Grenada
2. Saint Lucia
3. St. Vincent and the Grenadines

These are of interest as the proposed responsibilities were specifically not agreed to by some of the representative agents. These are highlighted in the following sub-sections. Also, any additional comments provided by the respondents are stated in the respective sections.

4.2.3.1 Regional Administrators

The regional administrators (global administrators and regional reviewers) are agencies that can access information that fishers identify as public. These agencies have a strategic priority for their support of FEWER and are a critical component for sustaining of FEWER. The summary of these administrators' responses is shown in Figure 27. The translation of questions posed in the MoU to key phrases used in the graphs is shown in Table 12.

Table 12 Key Phrases used in Graph related to Regional Administrators' Responses

Question	Related Phrase
1. Provide inputs into FEWER deployment, operation and updates	Co-design Inputs
2. Provide data and information for inclusion into FEWER	Content for Inclusion
3. Store historic events for later FEWER retrieval to preserve institutional memory	Save Historic Events
4. Specify how value of risk knowledge can be increased by and for small-scale fishers	Specify Increase in Risk Knowledge Value
5. Moderate alerts generated by FEWER mobile before broadcasting outside of communities	Verify Alert before Public Broadcast

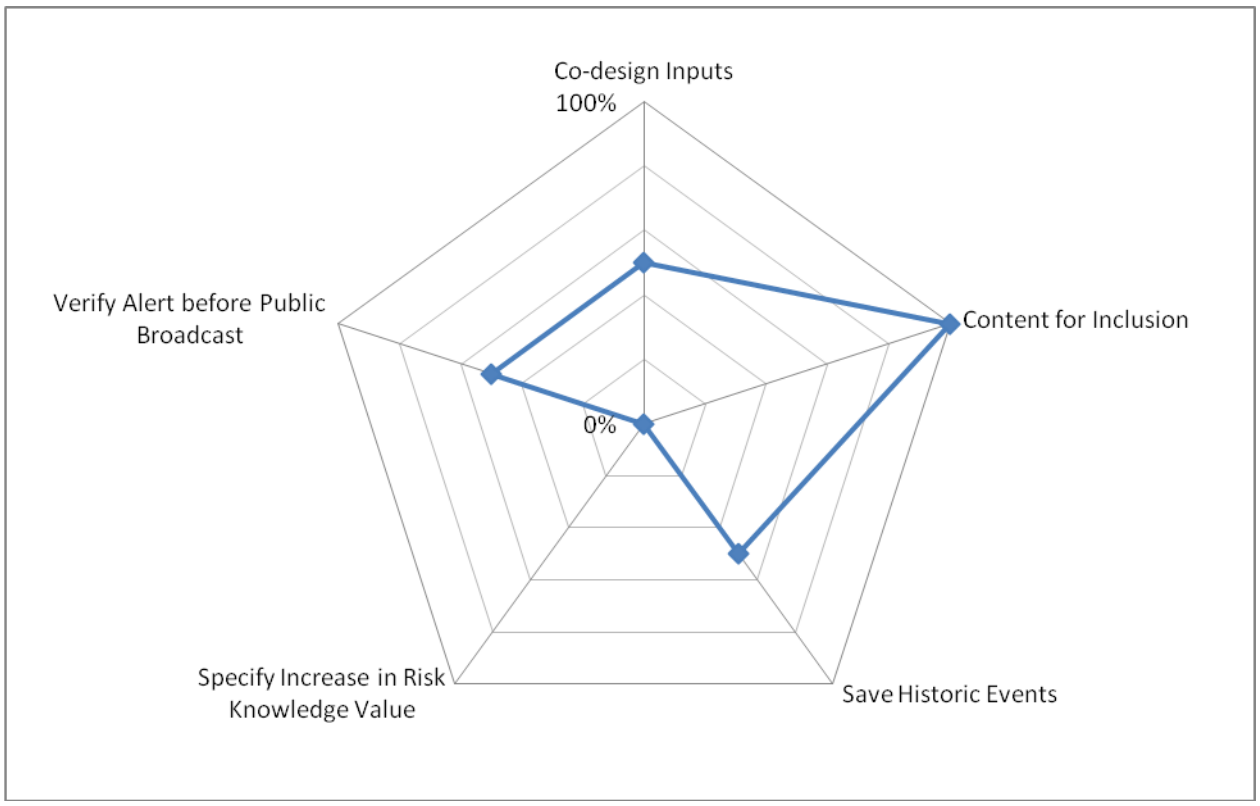


Figure 27 Regional Administrators MoU Responses

The regional administrators outright rejected the notion of specifying how value of risk knowledge can be increased by and for small-scale fishers. Other responses rejected the notion of:

1. Providing inputs into FEWER deployment, operation and updates;
2. Storing historic events for later FEWER retrieval to preserve institutional memory;
3. Moderating alerts generated by FEWER mobile before broadcasting outside of communities.

Mitigating, via FEWER, the immediate consequences of disasters and providing training, research and investigations, and appropriate ICT services and advice to FEWER Parties are responsibilities not supported by the regional administrators. One of the regional administrators added that their organisation would provide guidance on best meteorological practice and authoritative hydro-meteorological data sources to feed into FEWER.

4.2.3.2 Technical Administrator

The technical administrator ensures that all the software-related operations of the system are functional for the respective countries. Additionally, they are responsible for creating, updating and uploading data extractors for the Weather module. The summary of these administrators' responses is shown in Figure 28. The translation of questions posed in the MoU to key phrases used in the graphs is shown in Table 13.

Table 13 Key Phrases used in Graph related to Technical Administrator's Responses

Question	Phrase
1. Subscribe to third party web hosting	Subscribe to 3rd Party Web Hosting
2. Subscribe to third party software services	Subscribe to 3rd Party Software Services
3. Subscribe to optional API services	Subscribe to Optional API Services
4. Configure national and regional CAP sources	Configure National & Regional CAP Sources
5. Program reconfiguration of external data for weather sources	Program Reconfiguration of External Data for Weather Sources
6. Configure monthly test of CAP alert creation	Configure Monthly Tests of CAP Alerts
7. Support the identification and/or resolution of FEWER bugs	Support by Identifying and/or Resolution of FEWER Bugs

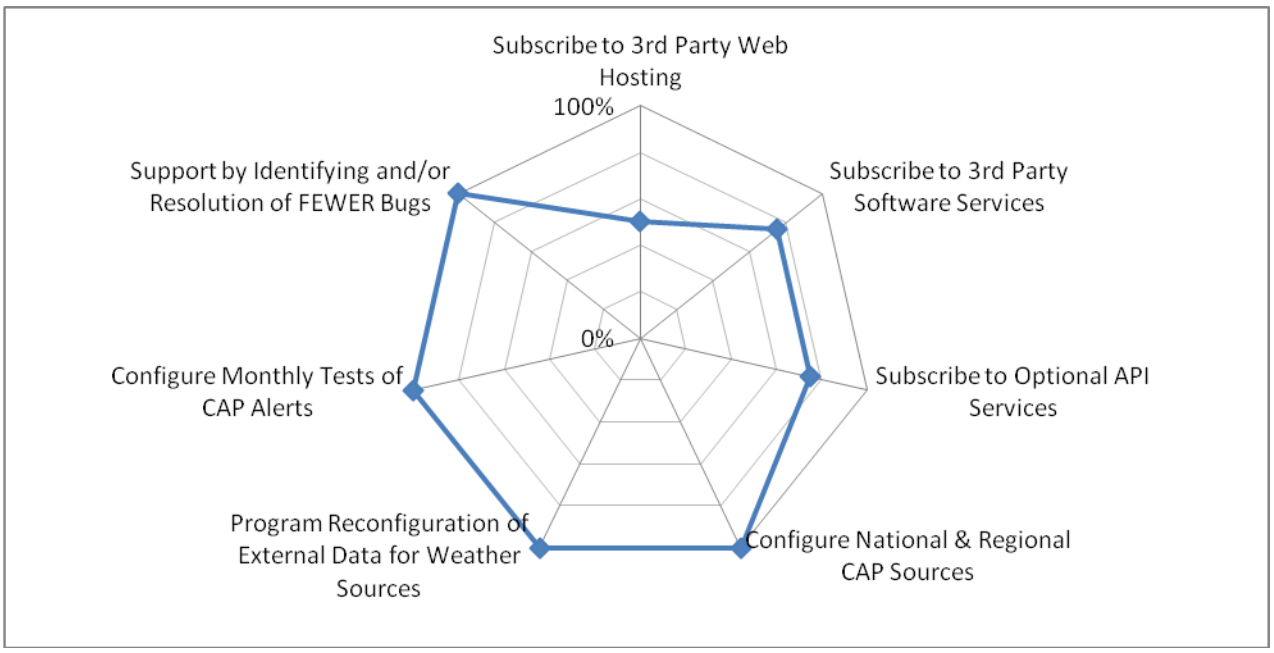


Figure 28 Technical Administrator MoU Responses

With four responses in this sample, the responses were noted that some of the technical administrators rejected the proposals of:

1. Subscribing to third party web hosting;
2. Subscribing to third party software services;
3. Subscribing to optional API services.

Notably, one respondent in St. Vincent and the Grenadines rejected third party web hosting in favour of existing government web hosting servers. Also, in subscription to other third party services, this respondent requested open source software services and optional API services are used.

Two respondents further articulated the responsibilities of the Technical Administrator to include:

1. Assisting in the resolution of technical issues in FEWER as they arise;
2. Assistance to other FEWER administrators.

4.2.3.3 Country Administrator

FEWER country administrators are responsible for the configuration, management and administration of the national FEWER installation. The summary of these administrators' responses is shown in Figure 29. The translation of questions posed in the MoU to key phrases used in the graphs is shown in Table 14.

Table 14 Key Phrases used in Graph related to Country Administrator's Responses

Question	Phrase
1. Provide inputs into FEWER deployment, operation and updates	Co-design Inputs
2. Provide data and information for inclusion into FEWER	Content for Inclusion
3. Store historic events for later FEWER retrieval to preserve institutional memory	Save Historic Events
4. Specify how value of risk knowledge can be increased by and for small-scale fishers	Specify Increase in Risk Knowledge Value
5. Moderate alerts generated by FEWER mobile before broadcasting outside of communities	Verify Alert before Public Broadcast
6. Promote the integration of FEWER into EAF, CCA and DRM	Promote Integration of FEWER into EAF, CCA & DRM
7. Provide fisheries data and information required by FEWER	Provide Fisheries Data & Info Required by FEWER
8. Include FEWER in fisheries extension services and training	Include FEWER in Fisheries Extension Services & Training
9. Develop the capacity to incorporate fishers local knowledge into climate-smart fisheries planning, management decision-making and risk management	Develop Capacity to Use Fishers' Local Knowledge
10. Provide support for fishers through FEWER stewards and champions	Provide Fishers' Support through FEWER Champions
11. Identify new sources of knowledge on climate and disaster risks and ensure they are configured in FEWER	Configure Newly Identified Climate & Disaster Risks Sources in FEWER
12. Collect FAD information through the local knowledge and peer-generated alerts on mobile client, as appropriate	Collect FAD info using Local Knowledge & Peer-generated Alerts
13. Include in training, situational learning that ties use of FEWER to its context and related tools such as PGIS	Include Situational Learning of FEWER Contextual Use Tied to Tools
14. Provide situational learning that ties use of FEWER to its context and related tools for inclusion in FEWER training materials	Provide Situational Learning Tied to FEWER Contextual Use for Training Materials

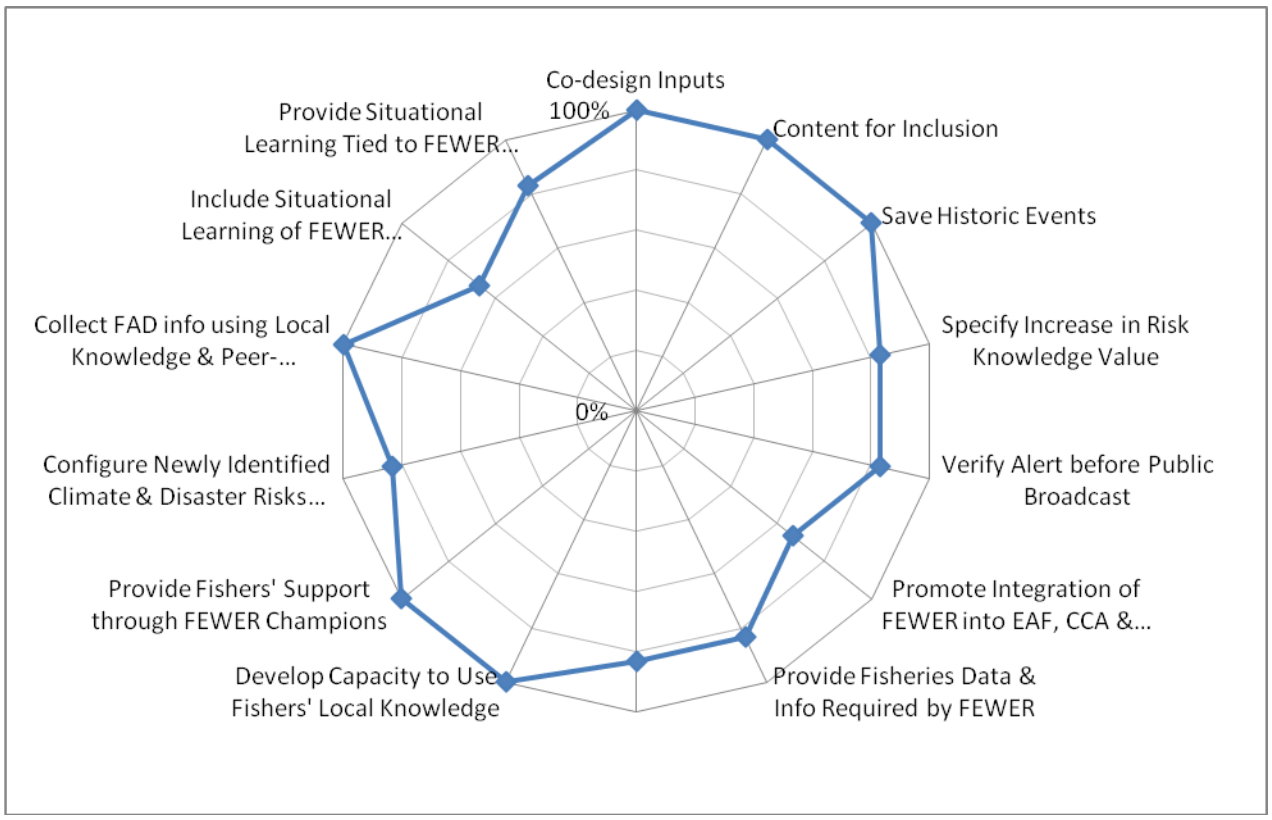


Figure 29 Country Administrator MoU Responses

With six responses in this sample, the responses noted that some of the country administrators rejected the proposals of:

1. Specifying how value of risk knowledge can be increased by and for small-scale fishers;
2. Moderating alerts generated by FEWER mobile before broadcasting outside of communities;
3. Promoting the integration of FEWER into EAF, CCA and DRM;
4. Including FEWER in fisheries extension services and training;
5. Identifying new sources of knowledge on climate and disaster risks and ensure they are configured in FEWER;
6. Including in training, situational learning that ties use of FEWER to its context and related tools such as PGIS;
7. Providing situational learning that ties use of FEWER to its context and related tools for inclusion in FEWER training materials.

Also, note that one respondent may not have understood the following statements as no answers were provided:

1. Promote the integration of FEWER into EAF, CCA and DRM
2. Provide fisheries data and information required by FEWER

It was recorded that one respondent did not understand the statement "Specify how value of risk knowledge can be increased by and for small-scale fishers".

Two respondents further articulated the responsibilities of the Technical Administrator to include:

1. Ensuring that all information is accurate and timely;
2. Providing some level of technical support to end users.

4.2.3.4 Agency Administrators

FEWER agency administrators provide key inputs into the application design and configuration; and also provide direct support for fishers through different vantage points: (i) fisheries (ii) hydrometeorology and (iii) disaster management. There are generally, therefore, several FEWER agency administrators in each country.

FEWER agency administrators are responsible for managing, disseminating and moderating communications relating to early warning and emergency response. The summary of these administrators' responses are shown in Figure 30, Figure 31 and Figure 32. The translation of questions posed in the MoU to key phrases used in the graphs shown in Table 15, Table 16 and Table 17.

Table 15Key Phrases used in Graph related to Agency Administrator's (Meteorological Office) Responses

Question	Phrase
1. Provide inputs into FEWER deployment, operation and updates	Co-design Inputs
2. Provide data and information for inclusion into FEWER	Content for Inclusion
3. Store historic events for later FEWER retrieval to preserve institutional memory	Save Historic Events
4. Specify how value of risk knowledge can be increased by and for small-scale fishers	Specify Increase in Risk Knowledge Value
5. Moderate alerts generated by FEWER mobile before broadcasting outside of communities	Verify Alert before Public Broadcast
6. Continuously improve marine forecasting and now-casting	Continuously Improve Marine Forecasting & Now-casting
7. Seek out new or improved marine data and climate services	Seek New / Improved Marine Data & Climate Services
8. Configure hazard alerts for fishers via FEWER using CAP	Configure Alerts for Fishers via FEWER
9. Improve the inputs to EWS from automated marine sensors	Improve EWS Inputs from Automated Marine Sensors
10. Provide training in climate service interpretation for fishers	Provide Training in Climate Interpretation for Fishers
11. Provide situational content to include in FEWER training	Provide Training Content
12. Trial crowd-sourced alerts at sea to assess the value of supplementing marine forecasts with now-casts	Trial Crowd-sourced Alerts @ Sea to Supplement Marine Forecasts
13. Specify, with prompt updates on change the URL and semantic format of weather information on the MET Office's website	Promptly Specify Changes to URL and Semantic Format of MET Office Website

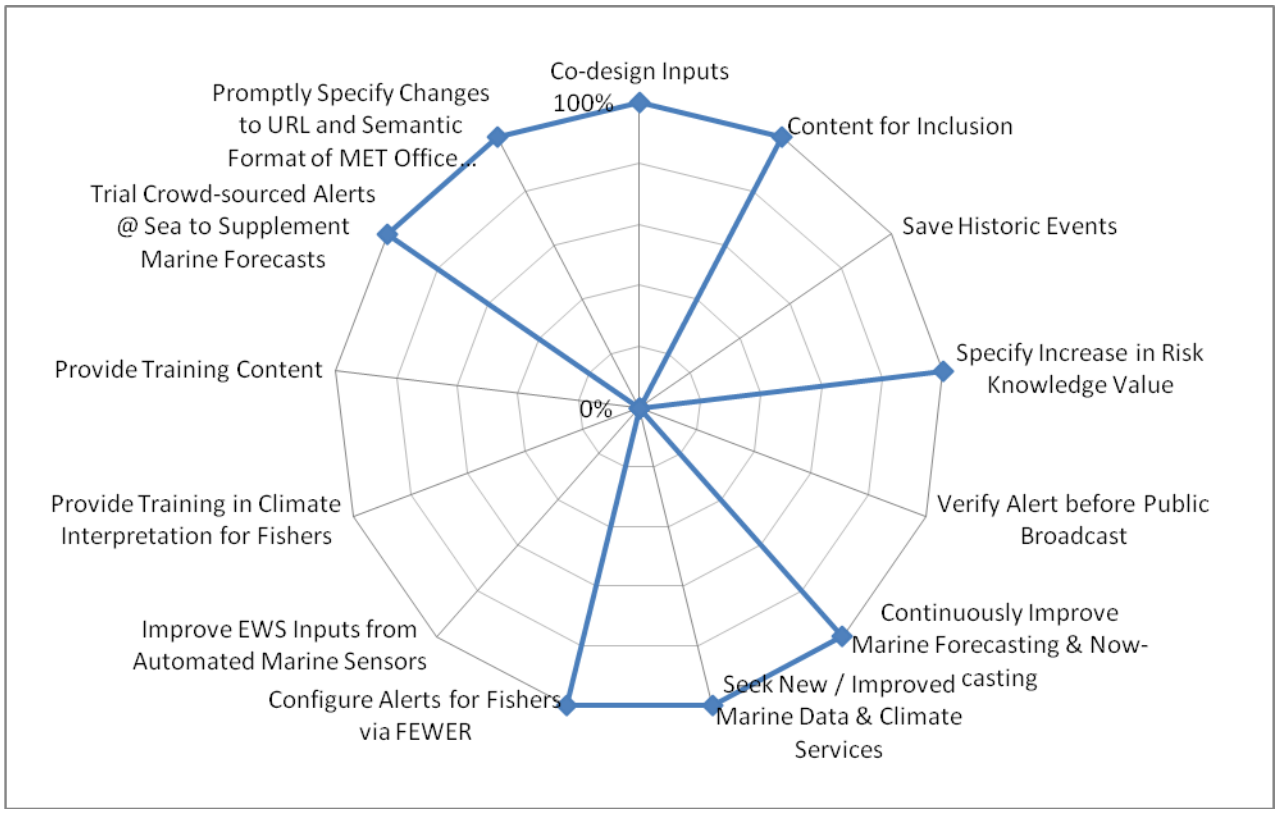


Figure 30 Agency Administrator (Meteorological Office) MoU Responses

Though the sample size was one, the responses were considered and noted that the agency administrator from a meteorological office rejected the proposals of:

1. Storing historic events for later FEWER retrieval to preserve institutional memory;
2. Moderating alerts generated by FEWER mobile before broadcasting outside of communities;
3. Improving the inputs to EWS from automated marine sensors;
4. Providing training in climate service interpretation for fishers;
5. Providing situational content to include in FEWER training.

Table 16 Key Phrases used in Graph related to Agency Administrator's (Fisherfolk Organisation) Responses

Question	Phrase
1. Provide inputs into FEWER deployment, operation and updates	Co-design Inputs
2. Provide data and information for inclusion into FEWER	Content for Inclusion
3. Store historic events for later FEWER retrieval to preserve institutional memory	Save Historic Events
4. Specify how value of risk knowledge can be increased by and for small-scale fishers	Specify Increase in Risk Knowledge Value
5. Moderate alerts generated by FEWER mobile before broadcasting outside of communities	Verify Alert before Public Broadcast
6. Participate and encourage participation of fishers in continued demand-led co-design of FEWER	Participate & Encourage Co-design of FEWER
7. Promote the use of FEWER by fishers as normal practice	Promote FEWER Use as Normal Practice

8. Support FEWER fisheries extension and training of fishers	Support FEWER Fishers' Training
9. Encourage fishers' sharing of local knowledge through FEWER	Encourage local knowledge sharing using FEWER
10. Establish organisational and community FEWER networks	Establish Organisational & Community FEWER networks
11. Provide support for fishers through FEWER stewards and champions	Provide Fishers' Support through FEWER Champions
12. Agree to be referenced in any FEWER documents with clear requirements and actions	Referenced in FEWER's Requirements & Actions

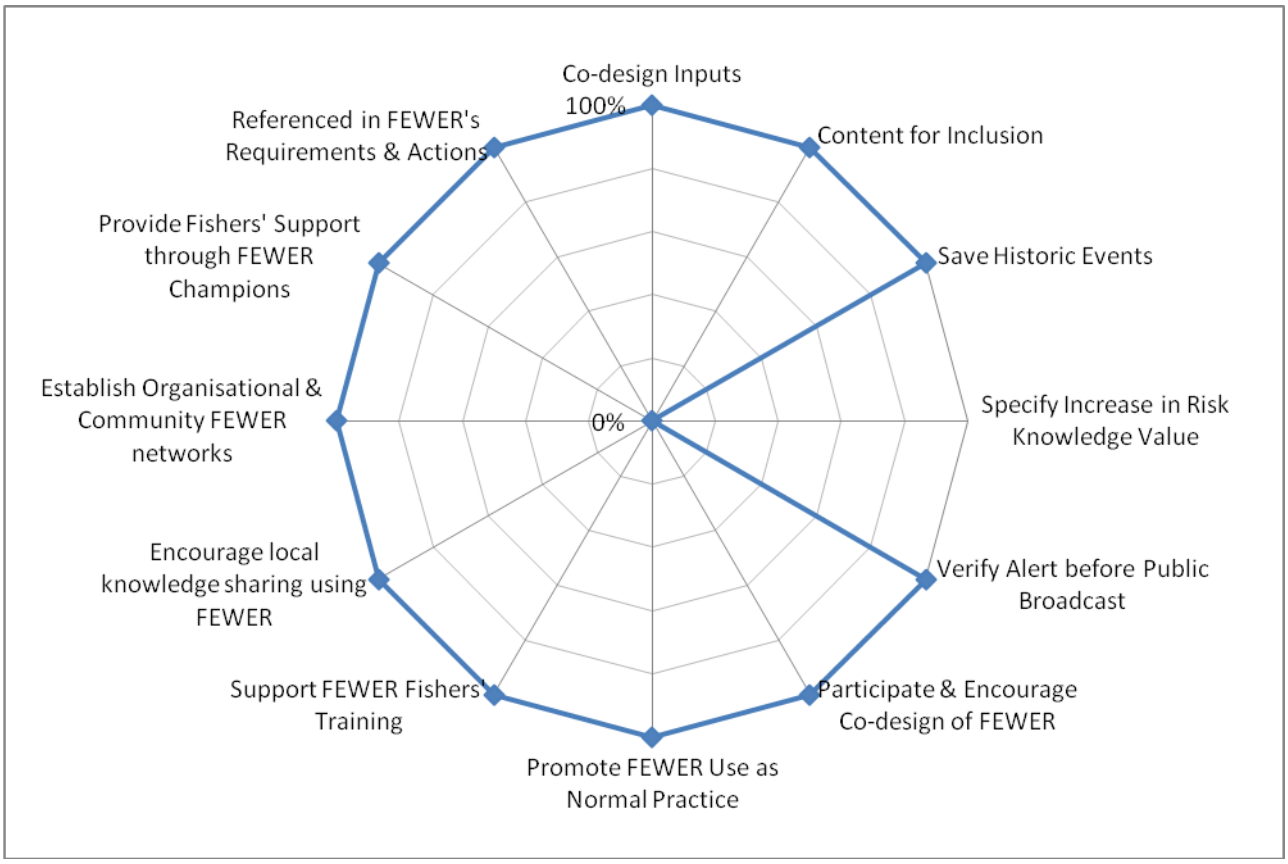


Figure 31 Agency Administrator (Fisherfolk Organisation) MoU Responses

Though the sample size was one, the responses were considered and noted that agency administrator from a fisherfolk organization did not provide an answer to "Specify how value of risk knowledge can be increased by and for small-scale fishers". It is possible that this statement may not have been understood by the respondent in order to give a response.

Table 17 Key Phrases used in Graph related to Agency Administrator's (Disaster Management Agency) Responses

Question	Phrase
1. Specify how value of risk knowledge can be increased by and for small-scale fishers	Specify Increase in Risk Knowledge Value
2. Incorporate the fisheries sector further into national MHEWS	Include Fisheries into National MHEWS
3. Endorse FEWER CAP templates for hazards at sea	Use FEWER CAP Templates
4. Integrate FEWER with national MHEWS including via CAP-compliance, testing, activation channels, contact Information and CAP alert templates for incidents at sea	Include FEWER into National MHEWS
5. Moderate alerts generated by FEWER mobile before broadcasting outside of communities	Verify Alert before Public Broadcast
6. As a primary FEWER agency administrator, access the FEWER alerts feed, view FEWER alerts and activate its dissemination channels	Access & Manage FEWER Alerts
7. Lead the development and adaptation of FEWER as part of the national MHEWS, especially integrating it with CAP	Lead FEWER integration with CAP
8. Provide inputs into FEWER deployment, operation and updates	Co-design Inputs
9. Provide data and information for inclusion into FEWER	Content for Inclusion
10. Store historic events for later FEWER retrieval to preserve institutional memory	Save Historic Events
11. Conduct training and exercises to test FEWER functionality	Help test FEWER
12. Provide situational content to include in FEWER training	Provide Training Content
13. Provide chunked emergency preparation and response procedures to include in FEWER	Provide Chunked Emergency Procedures
14. Include FEWER zero-rated messaging for emergency alerts and relief in existing and future negotiations with local telecommunication service providers	Include Zero-rated Messaging

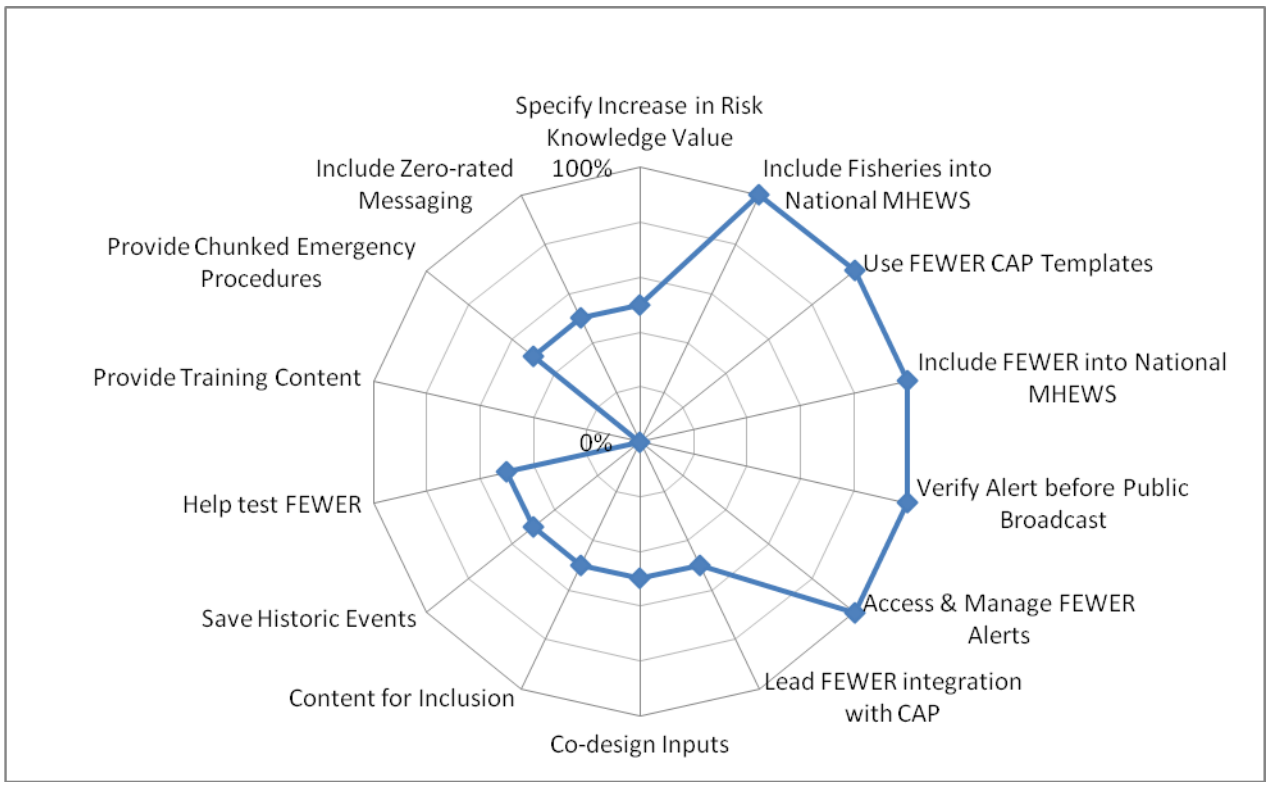


Figure 32 Agency Administrator (Disaster Management Agency) MoU Responses

For the Agency Administrators (Disaster Management Agencies), over 50% of responsibilities were not agreed to by at least one of the respondents. These specific responsibilities were:

1. Specifying how value of risk knowledge can be increased by and for small-scale fishers
2. Leading the development and adaptation of FEWER as part of the national MHEWS, especially integrating it with CAP
3. Providing inputs into FEWER deployment, operation and updates
4. Providing data and information for inclusion into FEWER
5. Storing historic events for later FEWER retrieval to preserve institutional memory
6. Conducting training and exercises to test FEWER functionality
7. Providing situational content to include in FEWER training
8. Providing chunked emergency preparation and response procedures to include in FEWER
9. Including FEWER zero-rated messaging for emergency alerts and relief in existing and future negotiations with local telecommunication service providers

4.2.3.5 Coast Guard

The coast guard manages operations that are restricted and focused specifically on monitoring the daily tracks of users as well as viewing records for the Alerts, Missing Persons and Weather modules.

The summary of these administrators' responses is shown in Figure 33. The translation of questions posed in the MoU to key phrases used in the graphs is shown in Table 18.

Table 18 Key Phrases used in Graph related to Coast Guard's Responses

Question	Phrase
1. Provide inputs into FEWER deployment, operation and updates	Co-design Inputs
2. Provide data and information for inclusion into FEWER	Content for Inclusion
3. Store historic events for later FEWER retrieval to preserve institutional memory	Save Historic Events
4. Specify how value of risk knowledge can be increased by and for small-scale fishers	Specify Increase in Risk Knowledge Value
5. Moderate alerts generated by FEWER mobile before broadcasting outside of communities	Verify Alert before Public Broadcast
6. Incorporate FEWER into SAR procedures and training	Include FEWER into SAR
7. Provide situational content to include in FEWER training	Provide Training Content
8. Provide chunked emergency preparation and response procedures to include in FEWER	Provide Chunked Emergency Procedures
9. Provide telecommunications infrastructure for marine VHF	Provide Marine VHF Infrastructure
10. Actively encourage proper use of marine VHF radio at sea	Actively Encourage VHF Radio Use

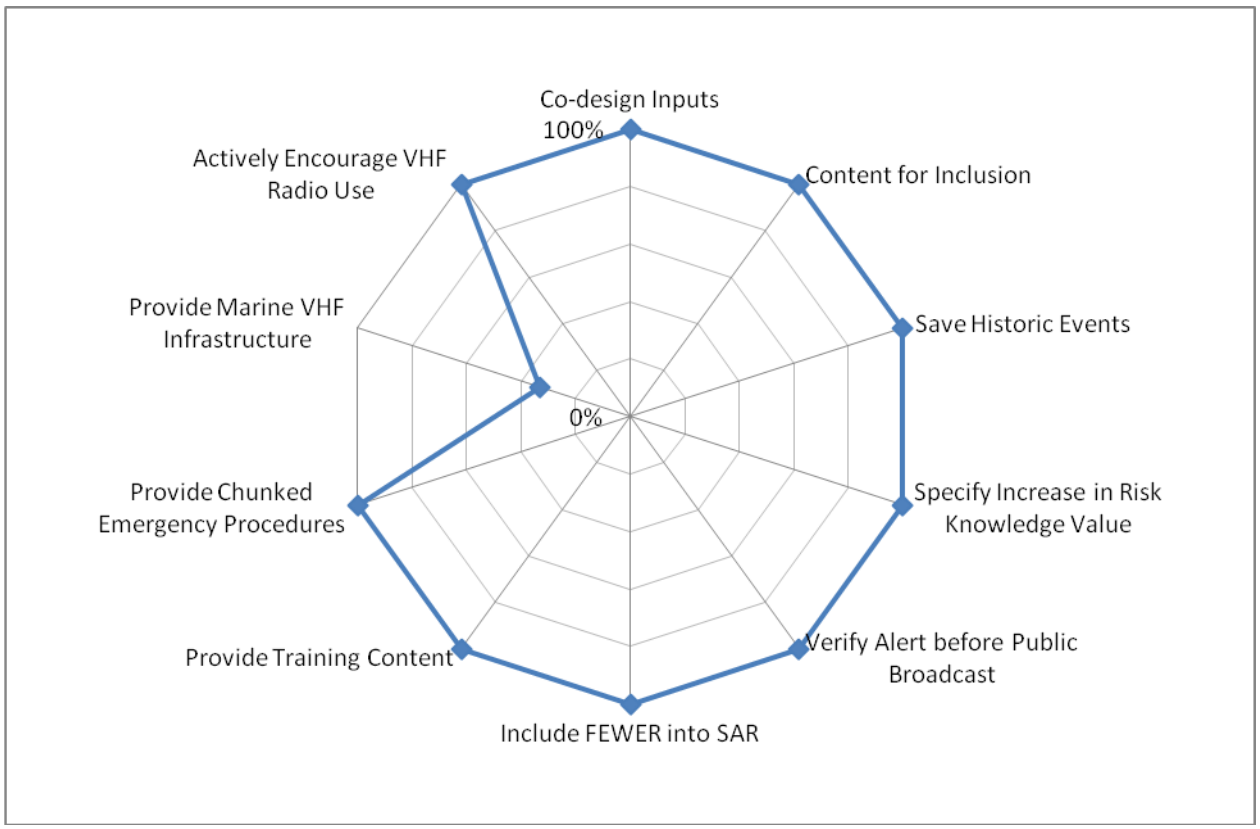


Figure 33 Coast Guard MoU Responses

There were three responses in this sample. Two of the three respondents rejected the responsibility that the coast guard provides telecommunications infrastructure for marine VHF. Also, note that one respondent explicitly rejected the responsibility of providing telecommunications infrastructure for marine VHF and stated that this is a responsibility of National Emergency Management Organisation (NEMO) in St. Lucia. Two respondents from Grenada provided conflicting answers, therefore warranting further discussion on this responsibility. Also, one respondent recorded another responsibility under his portfolio as "General safety at sea".

4.2.4 Assessment on using FEWER to Perform Tasks

As early as in the co-design meetings via Skype, participants such as Peter Regis collaborated and provided input into incorporating FEWER into fishers' livelihood. On December 11, 2017, he suggested that fishers could look out for each other and have someone check the alerts ever so often and if need be, rotate this monitoring between users to provide adequate warning to fellow fishers to minimise risks.

Specifically, both the administrators and fishers were engaged in learning to use the tool through hands-on sessions during the workshops, see Figure 34, in which they navigated to the required features to execute the tasks requested.

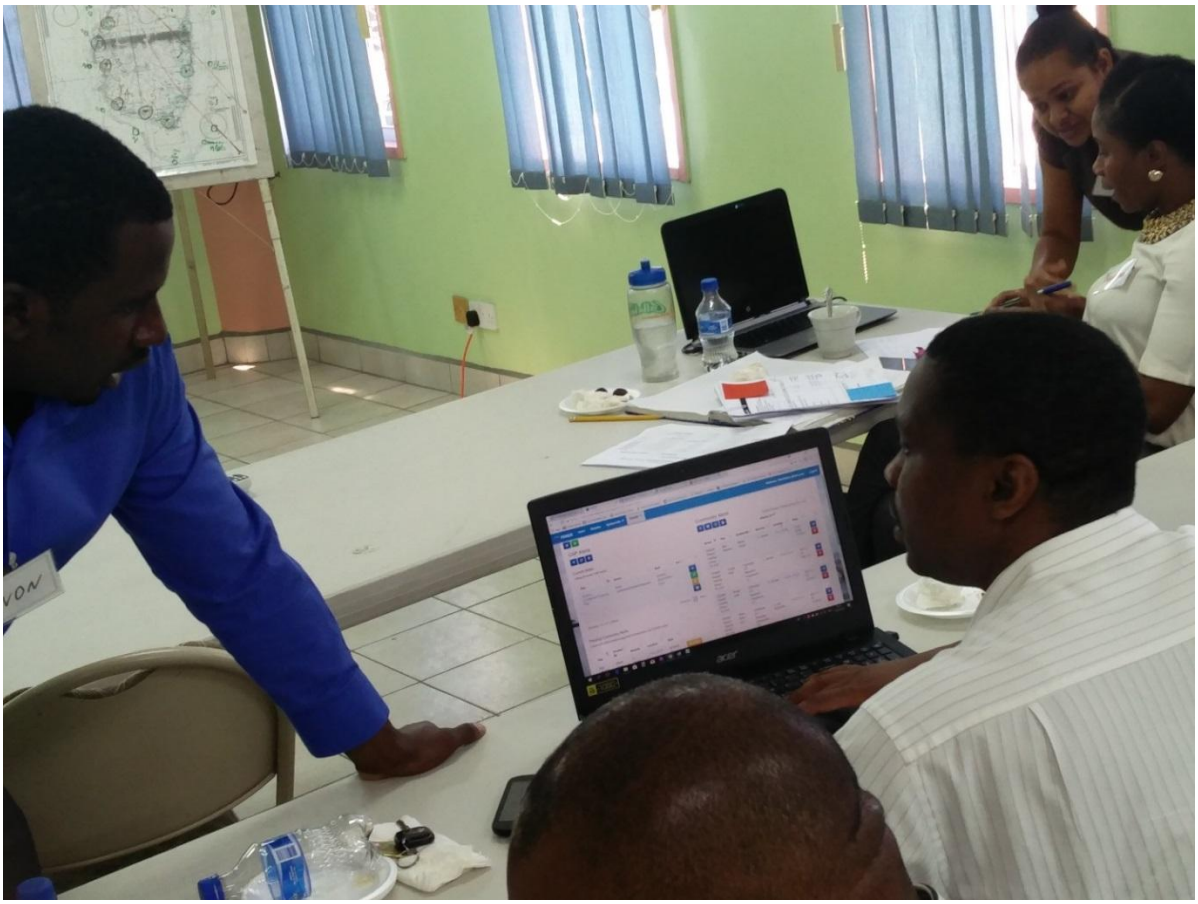


Figure 34 FEWER Training Team Members engaging Participants in the use of FEWER

In particular, some notable suggestions were made by participants regarding the use or content of some features thereby showing the comprehension of such features by the participants, for example:

1. For Missing Persons module, a fisher in Grenada requested, while others agreed that, an additional capability to state who found the person would be a desired feature

2. In St. Lucia, the Meteorological Office representative highlighted that information on swells was absent as the weather information in FEWER was extracted from the public forecast site and not another location on the Meteorological site which included the possibility of swells in the marine forecast.

In general, favourable comments were made by participants throughout the training programme. Table 19 shows just a few of these recorded contributions provided by stakeholders. Other participants graciously exclaimed their praises for the training workshop and the application.

Table 19 Users' Quotations about the FEWER Project

Date	Individual	Communication Media	Comments
07 Mar 2018	Joe Dublin (CALFICO, St. Vincent & the Grenadines)	Administrators' Training Workshop,	*"I'm very excited! Fishers will love this!"*
08 Mar 2018 (8:22 PM)	Winsbert Harry (Goodwill Fisherman Co-op, St. Vincent & the Grenadines)	FEWER SVG WhatsApp Group	*"Thanks it was a good workshop"*
09 Mar 2018 (6:50 AM)	Ashwa Stewart (Fisher and Boat owner, St. Vincent & the Grenadines)	FEWER SVG WhatsApp Group	*"Yeh,, this is a very good thing I know every one benefited a lot So congrats"*

4.2.5 Conclusions and Recommendations

All surveyed participants in the fishers' training workshops viewed all aspects of the training: training sessions, mobile phone tips discussions, trainers, venues and refreshments, as acceptable or better. All surveyed participants in the administrator's training workshops were at least satisfied with all aspects of the training.

The workshop evaluations and observations revealed areas to improve future FEWER training. Most particularly, it is recommended that scenario-based and role playing techniques be used to more thoroughly differentiate between:

1. Emergency Procedures and Damage Reporting
2. Emergency Procedures and Emergency Contacts
3. Emergency Procedures and Local Ecological Knowledge (LEK)
4. Local Ecological Knowledge (LEK) and Damage Reporting
5. Local Ecological Knowledge (LEK) for Missing Persons
6. Weather and Alerts.

Notably, there weren't any group of administrators that accepted all the proposed responsibilities in the MoUs. Also, input is required from some administrators in order to have a complete understanding of the administrators' accepted responsibilities in FEWER. These outstanding inputs should be obtained from:

1. The meteorological office representatives (agency administrators) in Saint Lucia and St. Vincent and the Grenadines;
2. The fisherfolk organisation representatives (agency administrators) in Grenada and Saint Lucia;
3. The coast guard in St. Vincent and the Grenadines.

This exercise yielded success in obtaining agreement from some administrators on their responsibilities. Further engagement, around other responsibilities not accepted, is suggested. Also, it is proposed that this engagement include the determination of whether the responsibilities as stated were clearly understood by all administrators. After this, the training team expects revisions to the MoUs.

While there is room for improvement, participants have heaped praises not only for the execution of the workshops but also for the application.

5. Impact Assessment

While the FEWER workshop training assessments provide some measure of reaction and learning within necessary constraints, the impact of training is evident in behaviour, results and the return on investment. These can only be assessed over some considerable time. Indeed, learning transfer takes place over a period of reinforcement. While it is reasonable to assume that additional cycles of FEWER training building on this foundational content is possible, this can only be accommodated in a longer project cycle. Behavioural change in humans and increased business value are associated with long term development plans and sustained support which often fall outside of project timelines and scope of engagement. Without additional follow-up or regular testing, measurement of actual learning retention remains superficial.

One of the FEWER project deliverables is an impact assessment tool to be applied over a timescale that extends beyond the FEWER project's lifetime. This tool, founded on the Kirkpatrick Model (1955)[6] and available in Appendix F, is designed to be used alongside a sustained programme of FEWER use and support. Sustainability, in turn, is only reasonably to be expected if FEWER as well as generic resilience-building measures and procedures, are programmatically incorporated into fisheries extension and capacity building.

[6] https://www.kirkpatrickpartners.com/Our-Philosophy/The-Kirkpatrick-Model

Appendix A. Prototype Meeting Details

Appendix A.1. Co-design Team Members

The following persons listed below are acknowledged to be a part of the co-design team for the FEWER project. This team comprised members from the public users and administrators groups. These public users were labelled as the FEWER Fishers group. These administrators were labelled as the FEWER Non-fishers group.

Note:

The entries highlighted in Yellow mean that the team member's country is unknown at the time of constructing this report.

The entries highlighted in Blue mean only the team member's Skype or Zoom name is known and not the full name.

Table 20 Co-design Team Members

Name	Country	Group
Mitchell Lay	Antigua and Barbuda	FEWER Fishers
Nadine Nembhard	Belize	FEWER Fishers
Dwight Scotland	Dominica	FEWER Fishers
Earl George	Dominica	FEWER Fishers
Hudson Toussiant	Dominica	FEWER Fishers
Huron Vidal	Dominica	FEWER Fishers
Philson Wallace	Dominica	FEWER Fishers
Aldwyn Ferguson	Grenada	FEWER Fishers
Antoine Arrendel	Grenada	FEWER Fishers
Desmond Gill	Grenada	FEWER Fishers
Dexter Miller	Grenada	FEWER Fishers
Dwayne Lewis	Grenada	FEWER Fishers
Kasha Walker	Grenada	FEWER Fishers
Luis Acosta	Grenada	FEWER Fishers
Lyndon Marrast	Grenada	FEWER Fishers
Royan Isaac	Grenada	FEWER Fishers

Devon Stephen	Saint Lucia	FEWER Fishers
Winston Hobson	St Kitts & Nevis	FEWER Fishers
Darren Leon	St Lucia	FEWER Fishers
Horace Walters	St Lucia	FEWER Fishers
Joseph Shepherd	St Lucia	FEWER Fishers
Mac Clement St Rose	St Lucia	FEWER Fishers
Michael Desir	St Lucia	FEWER Fishers
Peter Regis	St Vincent and the Grenadines	FEWER Fishers
Reuben Bradshaw	St Vincent and the Grenadines	FEWER Fishers
Roderick Telemac	St Vincent and the Grenadines	FEWER Fishers
Seon Lucas	St Vincent and the Grenadines	FEWER Fishers
Winsbert Harry	St Vincent and the Grenadines	FEWER Fishers
Darwin Francis	St. Kitts and Nevis	FEWER Fishers
Winston Hazelwood	St. Vincent and the Grenadines	FEWER Fishers
Joslyn LeeQuay	Trinidad and Tobago	FEWER Fishers
Delmar Lanza	Belize	FEWER Non-Fishers
Claudine Roberts	Dominica	FEWER Non-Fishers
Maren Headley	St. Vincent and the Grenadines	FEWER Non-Fishers
Pamela Gibson	St. Vincent and the Grenadines	FEWER Non-Fishers
Peter Murray	Belize	FEWER Non-Fishers
Jerry Lewis	Grenada	FEWER Non-Fishers
Kemron Dufont	Grenada	FEWER Non-Fishers
Raphael Paul	Grenada	FEWER Non-Fishers
Samantha Dickson	Grenada	FEWER Non-Fishers
Shawn Charles	Grenada	FEWER Non-Fishers

Ainsley Henry	Jamaica	FEWER Non-Fishers
Erica Haughton	Jamaica	FEWER Non-Fishers
Gail Hoad	Jamaica	FEWER Non-Fishers
Yvonne Edwin	Saint Lucia	FEWER Non-Fishers
Hardin Pierre	St Lucia	FEWER Non-Fishers
Lionel Ellis	St Lucia	FEWER Non-Fishers
Terry Charles	St Lucia	FEWER Non-Fishers
Billy Jeffers	St Vincent and the Grenadines	FEWER Non-Fishers
Joan McDonald	St Vincent and the Grenadines	FEWER Non-Fishers
Susan Singh-Renton	St Vincent and the Grenadines	FEWER Non-Fishers
June Masters	St. Vincent and the Grenadines	FEWER Non-Fishers
R Staine		FEWER Non-Fishers

Appendix A.2. Co-design Timeline

Table 21 Co-design Sessions for Fishers

	Fishers Co-design Session Dates
1.	04 September 2017
2.	25 September 2017
3.	02 October 2017
4.	09 October 2017
5.	23 October 2017
6.	30 October 2017
7.	09 November 2017
8.	22 November 2017
9.	27 November 2017
10.	11 December 2017
11.	08 January 2018

Table 22 Co-design Sessions for Administrators

	Administrator Co-design Session Dates
1.	23 October 2017
2.	30 October 2017
3.	13 November 2017
4.	27 November 2017
5.	04 December 2017

6.	11 December 2017
7.	15 December 2017
8.	22 January 2018
9.	29 January 2018

Appendix B. Face to Face Workshop Training Materials

Training materials used in the face to face workshops in Grenada are shown here as a sample of materials used in other territories.

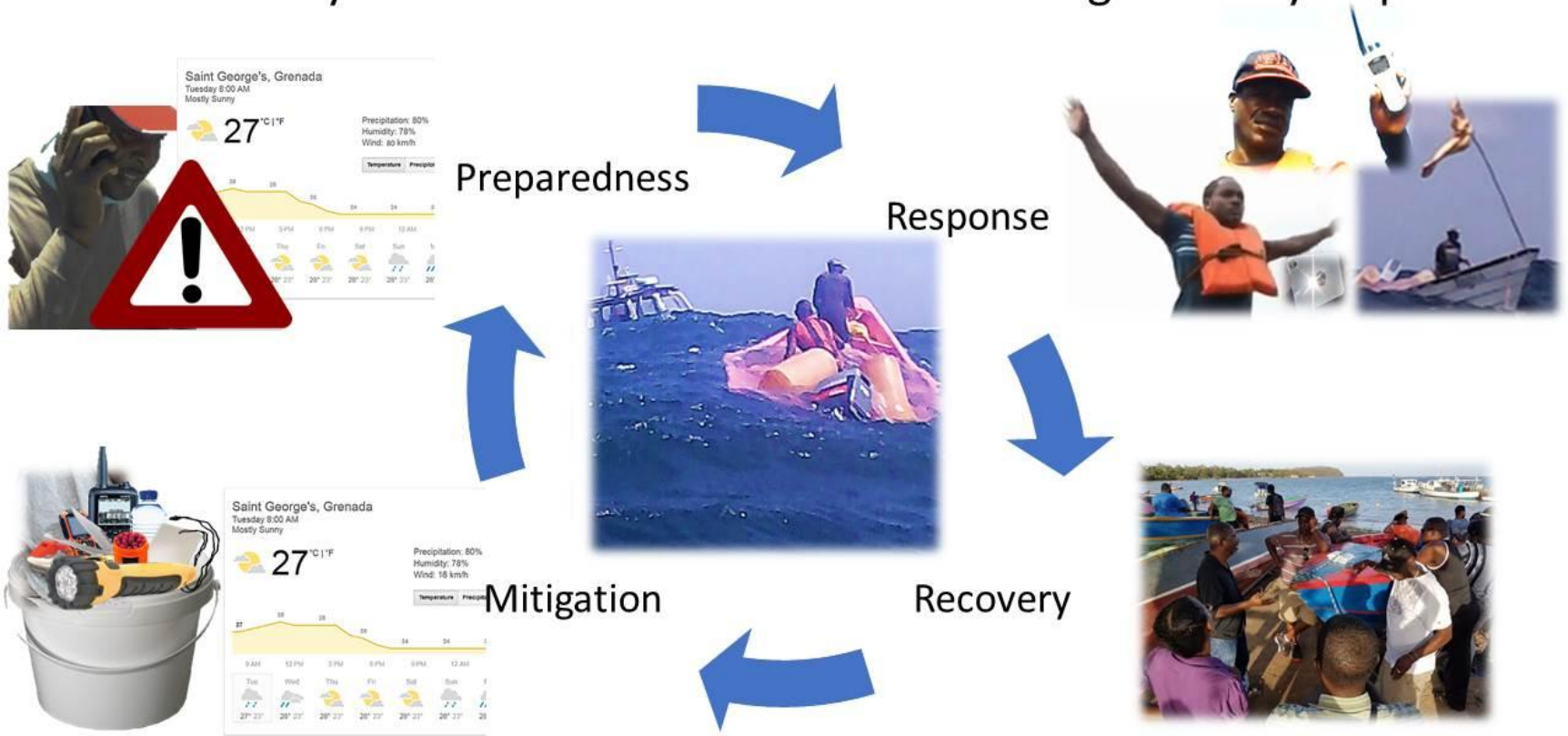
Appendix B.1. Welcome and Introduction to FEWER Administrators' Training

Agenda

8:30 am	Welcome
8:45 am	Introduction to FEWER
9:15 am	FEWER walk-through
9:45 am	Hands-on activity with web-based dashboard & resources
10:15 am	**Snack Break**
10:30 am	Hands-on FEWER admin tasks: all
12:30pm	Evaluation: regional, country & agency admins
12:45 pm	**Lunch Break**
1:30 pm	Hands-on FEWER admin tasks: coast guard & tech admins
2:30 pm	Discussion
3:00 pm	**Drinks Break**
3:15 pm	Hands-on FEWER admin tasks: tech admins
4:15 pm	Hands-on evaluation: tech admins
4:30 pm	**End of workshop**

Fishing is world's most dangerous job, Forbes (2017)

Fishers already reduce their risks in disaster management cycle phases:



Fisheries Early Warning (EW) & Emergency Response (ER)
FEWER

- Further reduces fishers' vulnerability to weather and climate related hazards

- Facilitates sharing of local knowledge to inform climate-smart fisheries planning, management decision-making & risk management
- To be integrated into existing national & regional disaster risk management and emergency response frameworks
- Supports the work of several agencies

FEWER

Local Ecological Knowledge (LEK)

Weather

Emergency Contacts

Damage Reporting

Messaging

Alerts

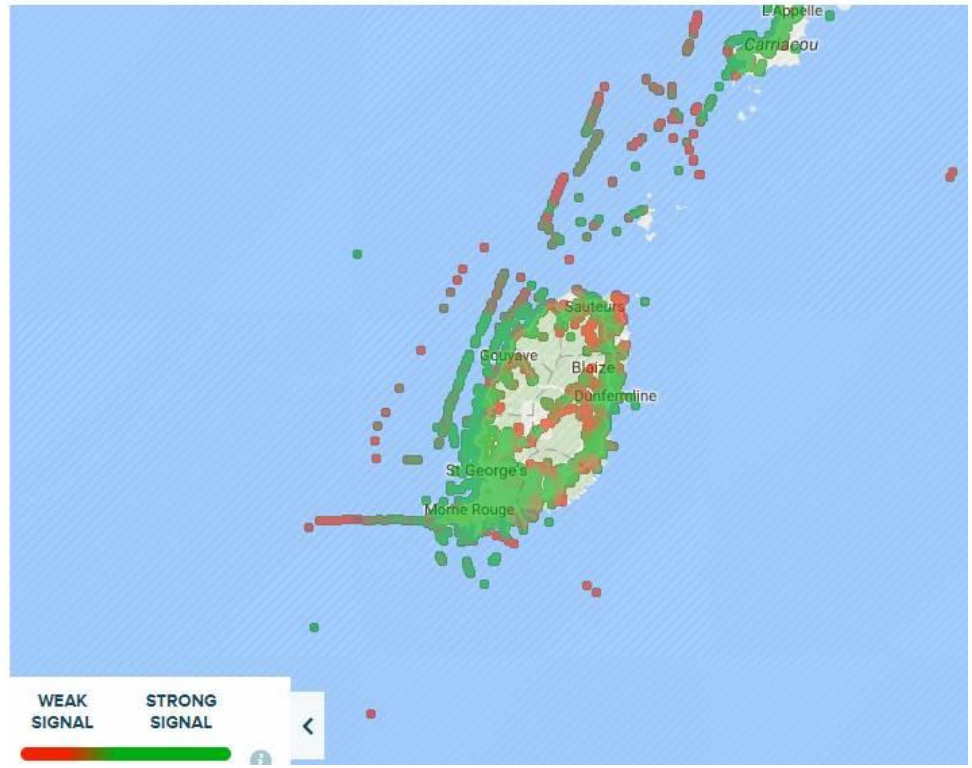
Emergency Procedures

Missing Persons

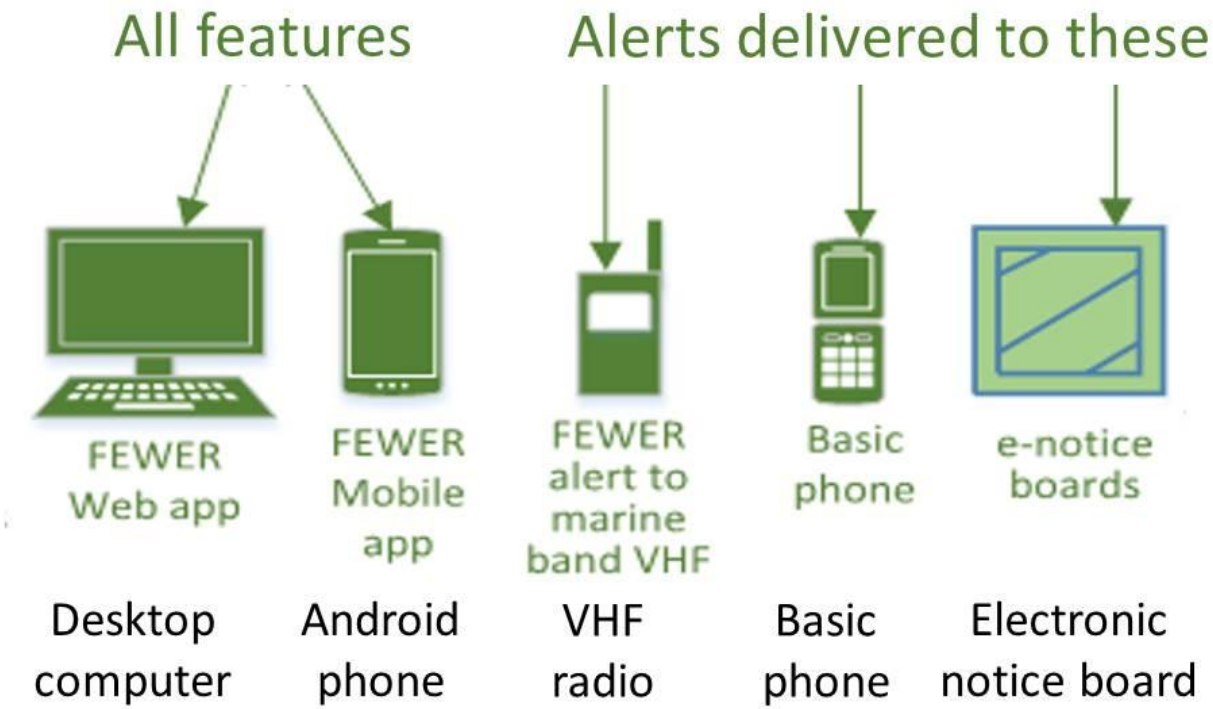
Mitigation		**LEK**	*Every day fishers record things to reduce their risk at sea*
		**Messaging**	*Every day fishes keep in touch with others for safety*
Preparedness		**Weather**	*Every day fishers check weather and if it's bad, share*
		**Alerts**	*When an emergency is coming fishers send alerts*
Response		**Emergency Contacts**	*In emergencies fishers use up-to-date emergency contacts*
		**Emergency Procedures**	*In emergencies fishers know what to do*
Recovery		**Damage Reporting**	*When fishers suffer loss or damage, they create a report*
		**Missing Persons**	*When a fisher goes missing, others broadcast to help recover*

Local Ecological Knowledge (LEK)	✓✓✓
Messaging	✓
Weather	✓✓
Alerts	✓
Emergency Contacts	✓✓
Emergency Procedures	✓✓✓
Damage Reporting	✓✓
Missing Persons	✓✓

FEWER provides info always;
needs cell service or WiFi to communicate
(send or receive)

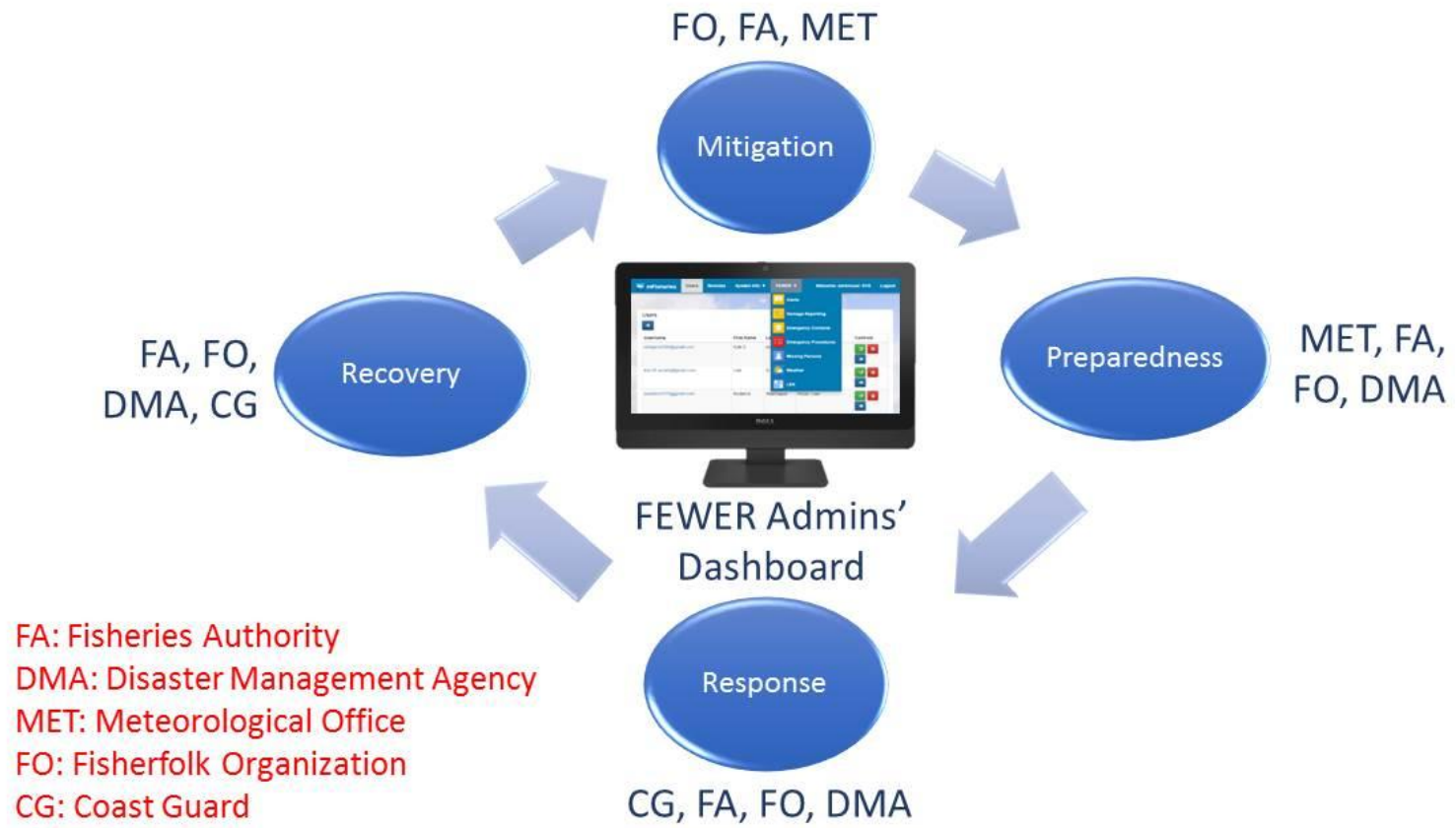


FEWER features depend on device



FEWER works with other tools to reduce risks

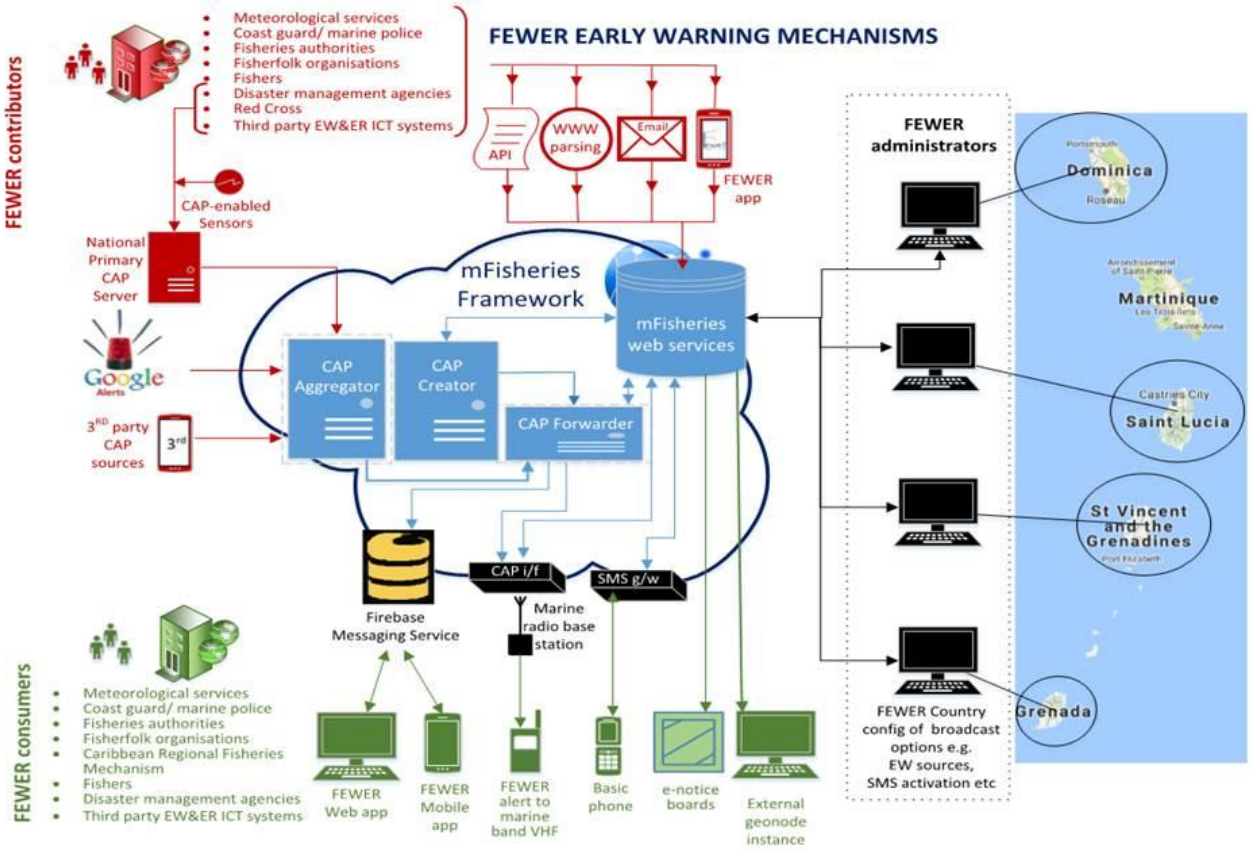
FEWER works within national & regional systems



FA: Fisheries Authority
DMA: Disaster Management Agency
MET: Meteorological Office
FO: Fisherfolk Organization
CG: Coast Guard

Eg Integration into National CAP System

CAP = Common Alerting Protocol



FEWER admin is at regional, country & agency levels

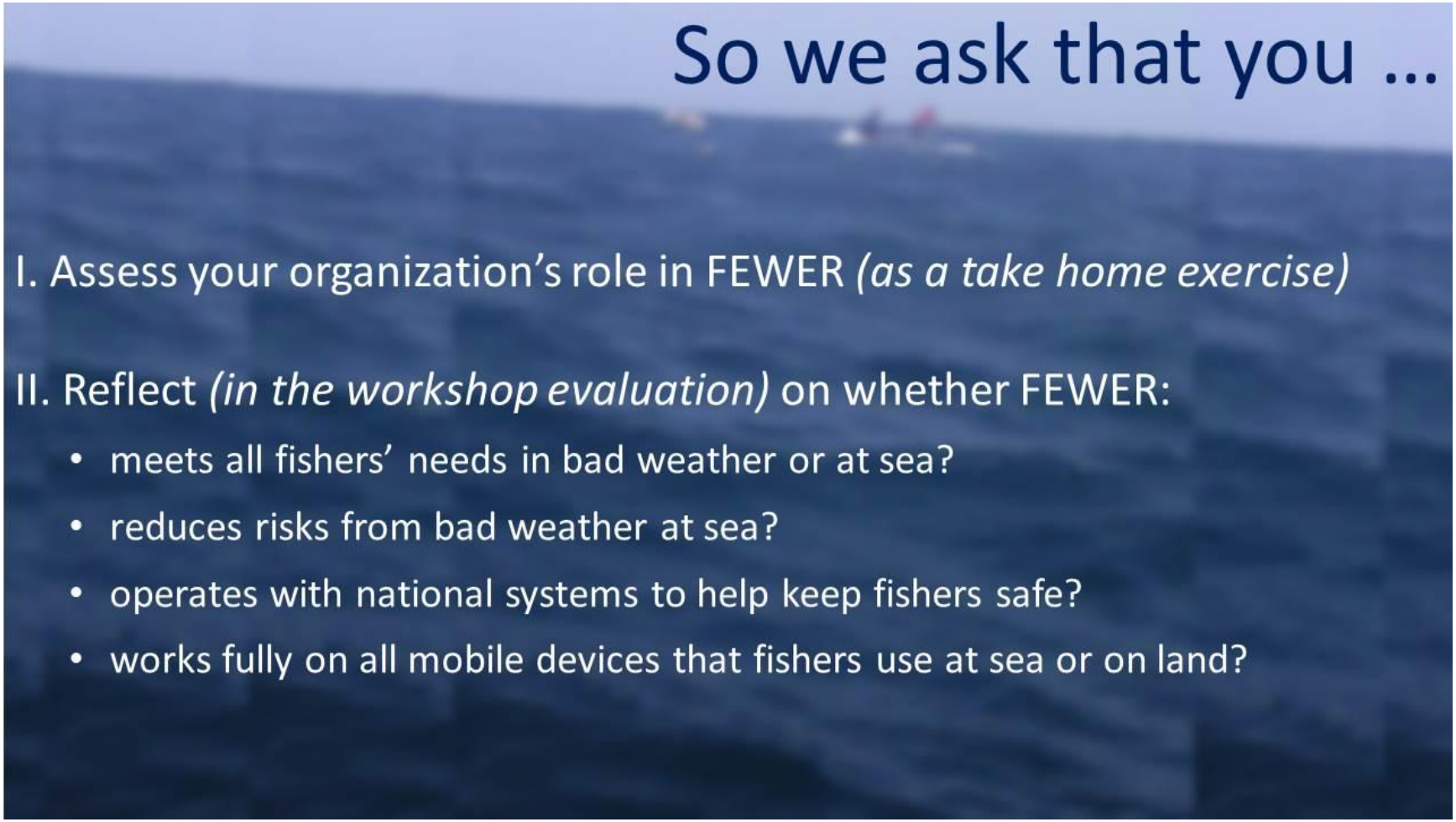
Key Admin focal points include but are not limited to:

Regional Admin	• Include fishers' EW & ER in regional policies and programmes for fisheries, hydromet & DRM • Ensure FEWER is maintained & included in regular operations; use its reports in policy and planning
Country Admin: Fisheries Authority	• Include fishers' EW & ER in national fisheries policies and programmes; and promote best practice • Manage national FEWER, include it in extension services, and use its reports in policy & planning
Agency Admin: DMA	• Integrate FEWER & its CAP templates into the national MHEWS, activating its channels as needed • Provide situational learning content as well as emergency preparation and response procedures
Agency Admin: MET	• Ensure FEWER weather thresholds & icons are correct & fit for purpose; recommend improvements • Promptly notify FEWER tech admin of changes to weather information on website
Agency Admin: Fisherfolk Organization	• Support FEWER training and promote the use of FEWER by fishers as normal practice • Establish organisational & community FEWER networks; encourage fishers to share local knowledge
Coast Guard	• Incorporate FEWER into regular search and rescue operations and training • Provide learning resources and training on matters relating to safety and communications at sea
Technical Admin	• Provide all technical support necessary to maintain FEWER & support other admins on technical matters

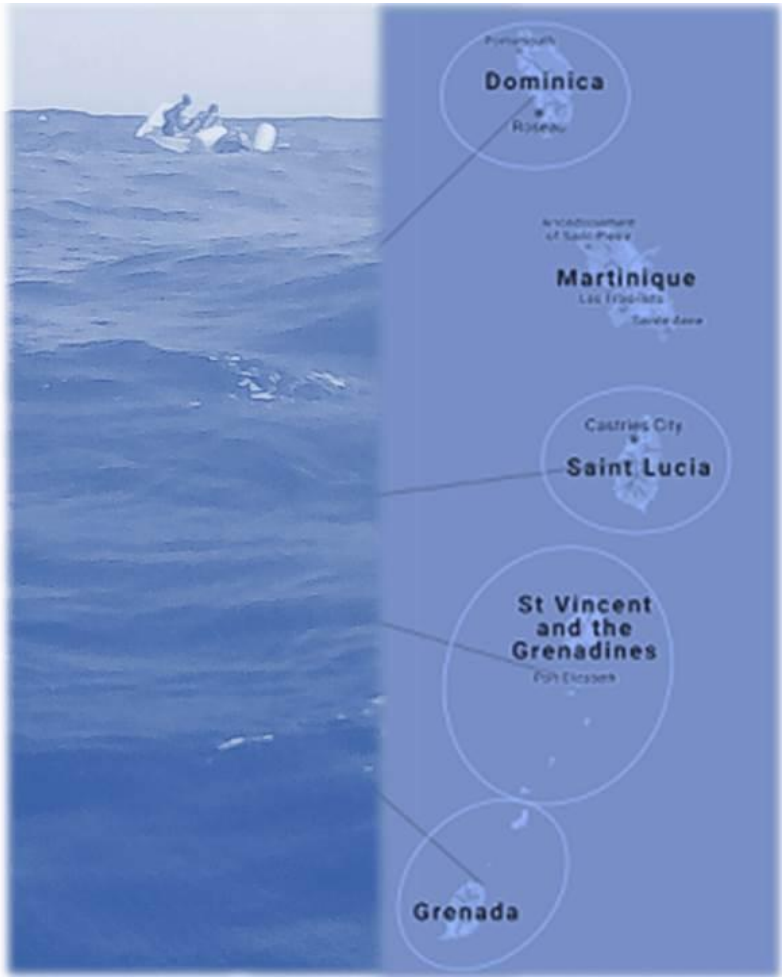
Strategy

- The overarching strategy is to build fishers' resilience

- Essential to incorporate fisher engagement and support into the planning & operations of key agencies: fisheries authorities, disaster management (DM) agencies, MET services and fisherfolk organizations as well as regional authorities on fisheries, DM and hydrometeorology in order to:
  - build fishers' understanding of risks and mechanisms for mitigation and response
  - develop relevant skills
  - provide context-appropriate reinforcement of these mechanisms


So we ask that you …
I. Assess your organization's role in FEWER (as a take home exercise)
II. Reflect (in the workshop evaluation) on whether FEWER:
• meets all fishers' needs in bad weather or at sea?
• reduces risks from bad weather at sea?
• operates with national systems to help keep fishers safe?
• works fully on all mobile devices that fishers use at sea or on land?

QUESTIONS?

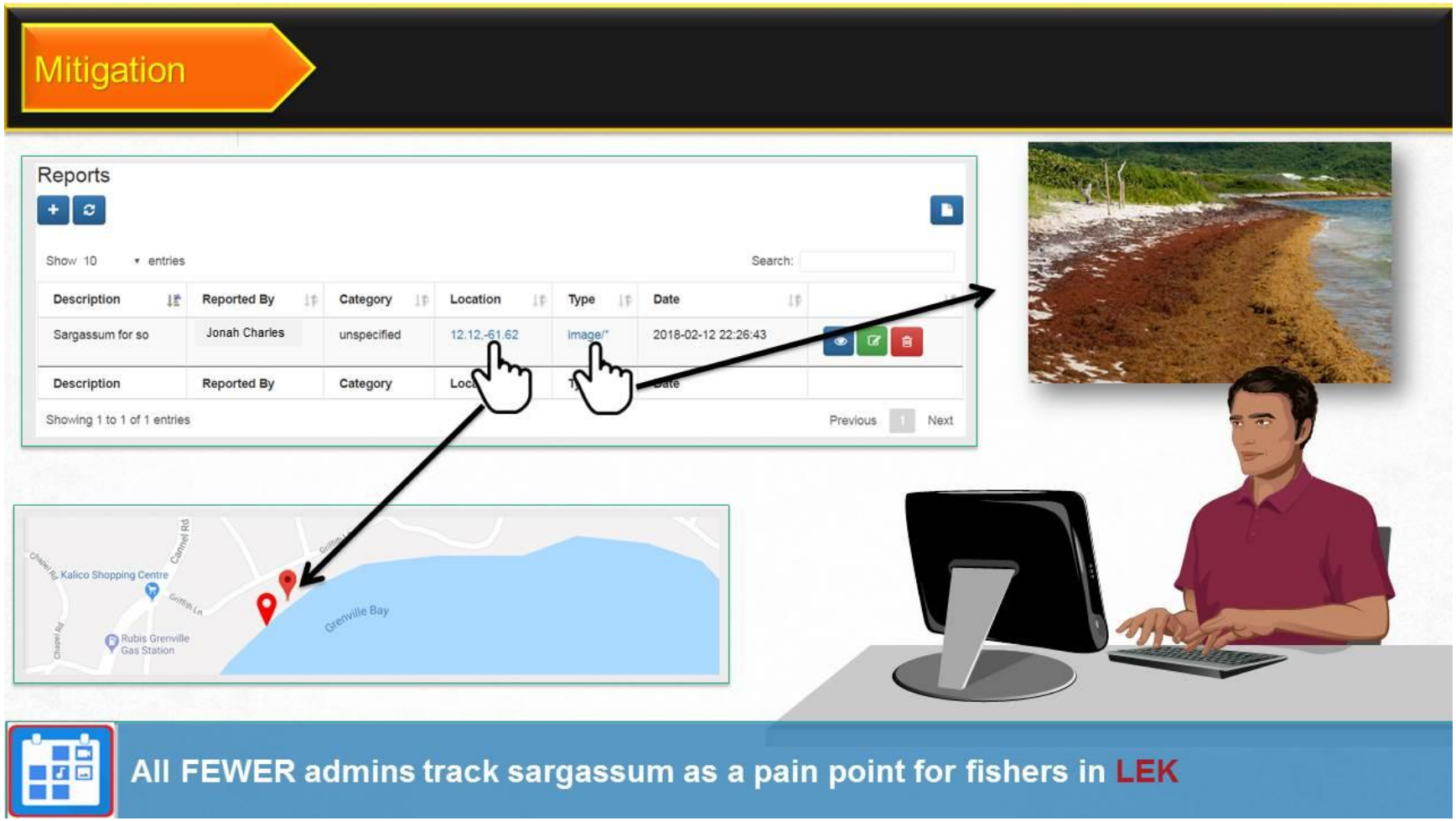

Dominica
Martinique
Saint Lucia
St Vincent
and the
Grenadines
Grenada

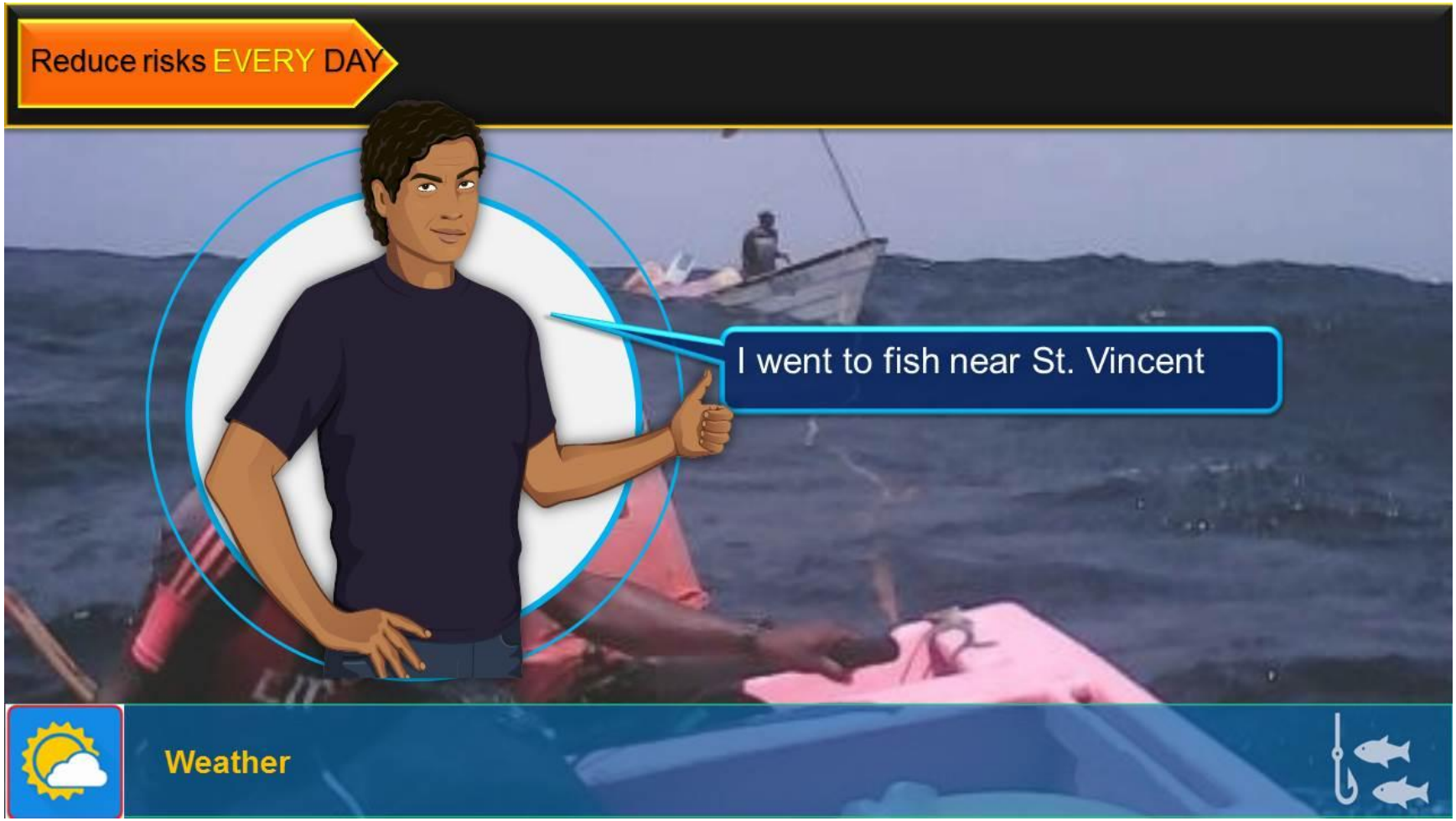
Appendix B.2. FEWER Administrators' Walkthrough

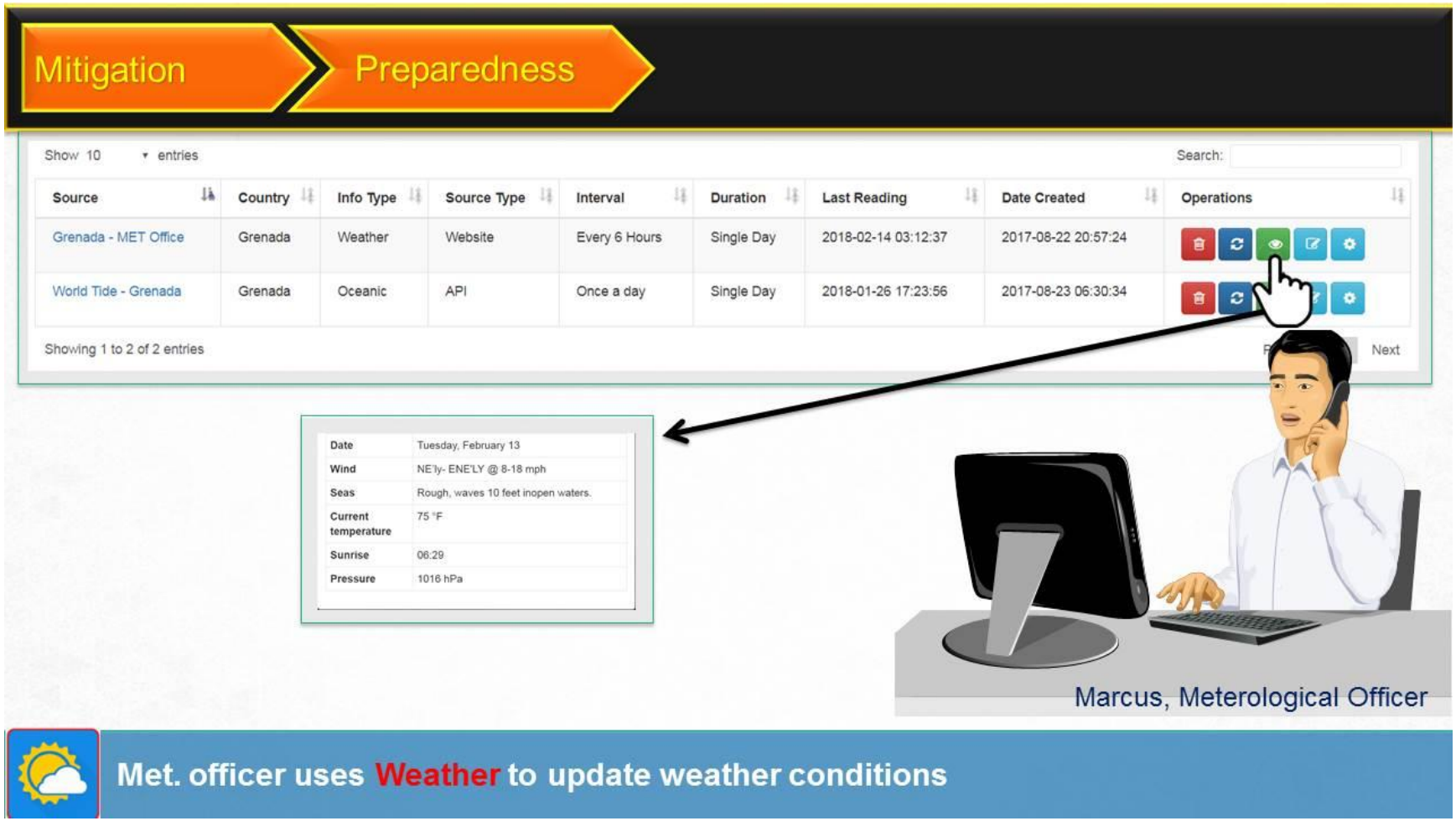

Mobile User App
Jonah, fisher from Grenville, Grenada

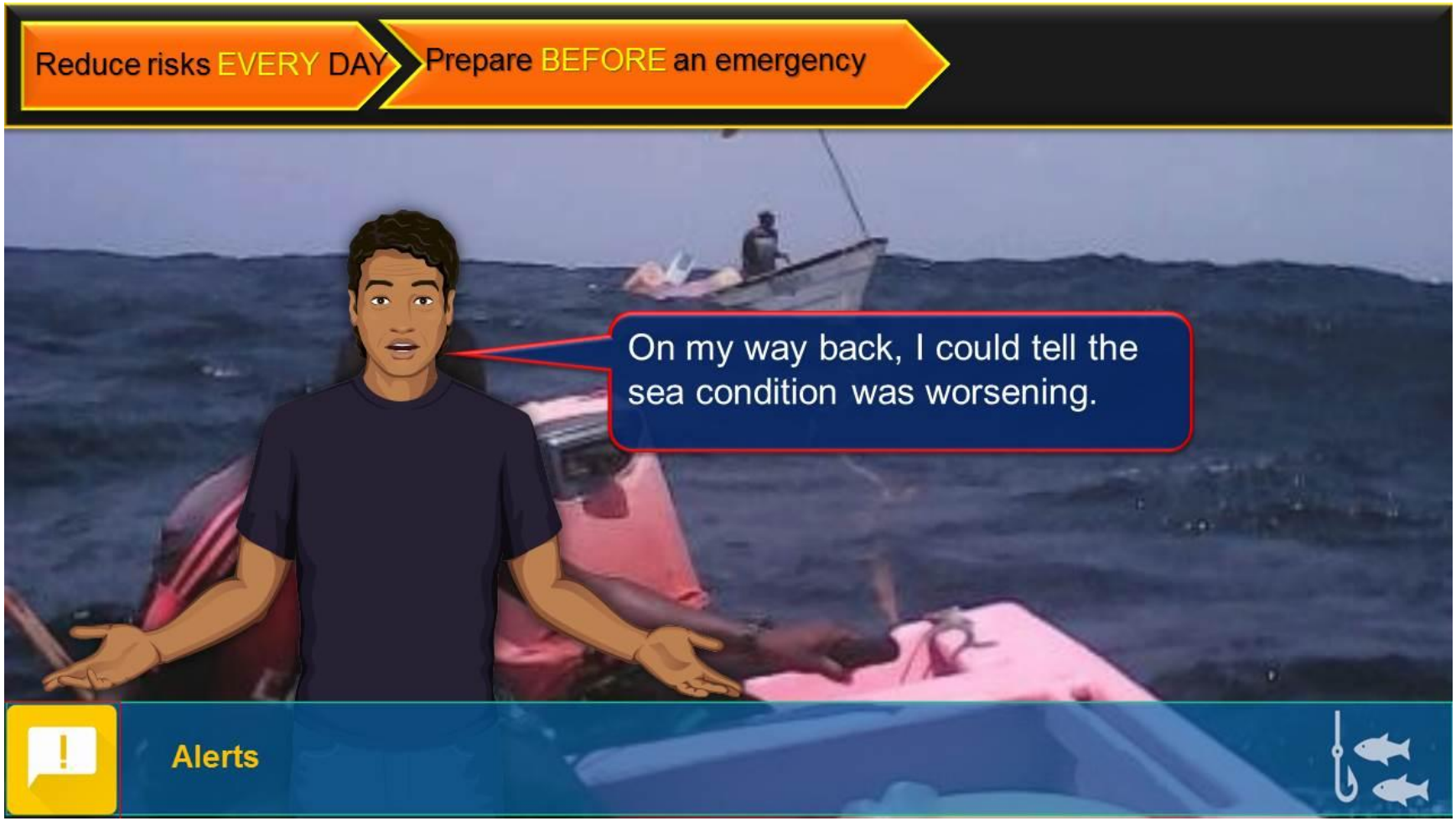

Mitigation
Preparedness
Response
Recovery
Local Ecological Knowledge
Weather
Alerts
Emergency Contacts
Emergency Procedures
Damage Reporting
Missing Persons
FEWER
Alerts
Damage Reporting
Emergency Contacts
Emergency Procedures
LEK
Missing Persons
Weather
Brent, Fisheries Officer, Grenada

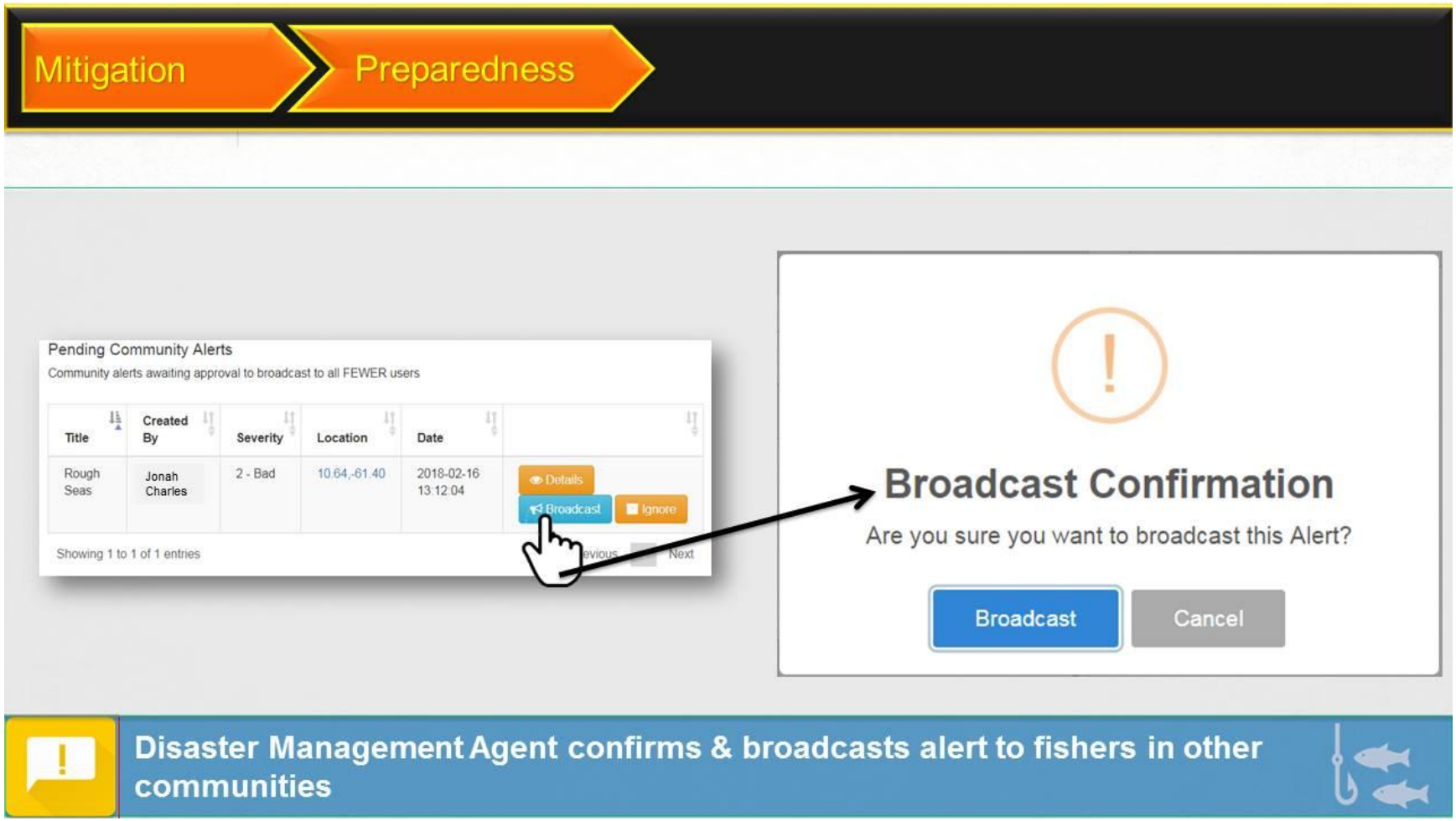

Reduce risks EVERY DAY
Oh gosh, look **sargassum** again!
I took a picture with my phone.
Jonah uses his photo in Local Ecological Knowledge (LEK)

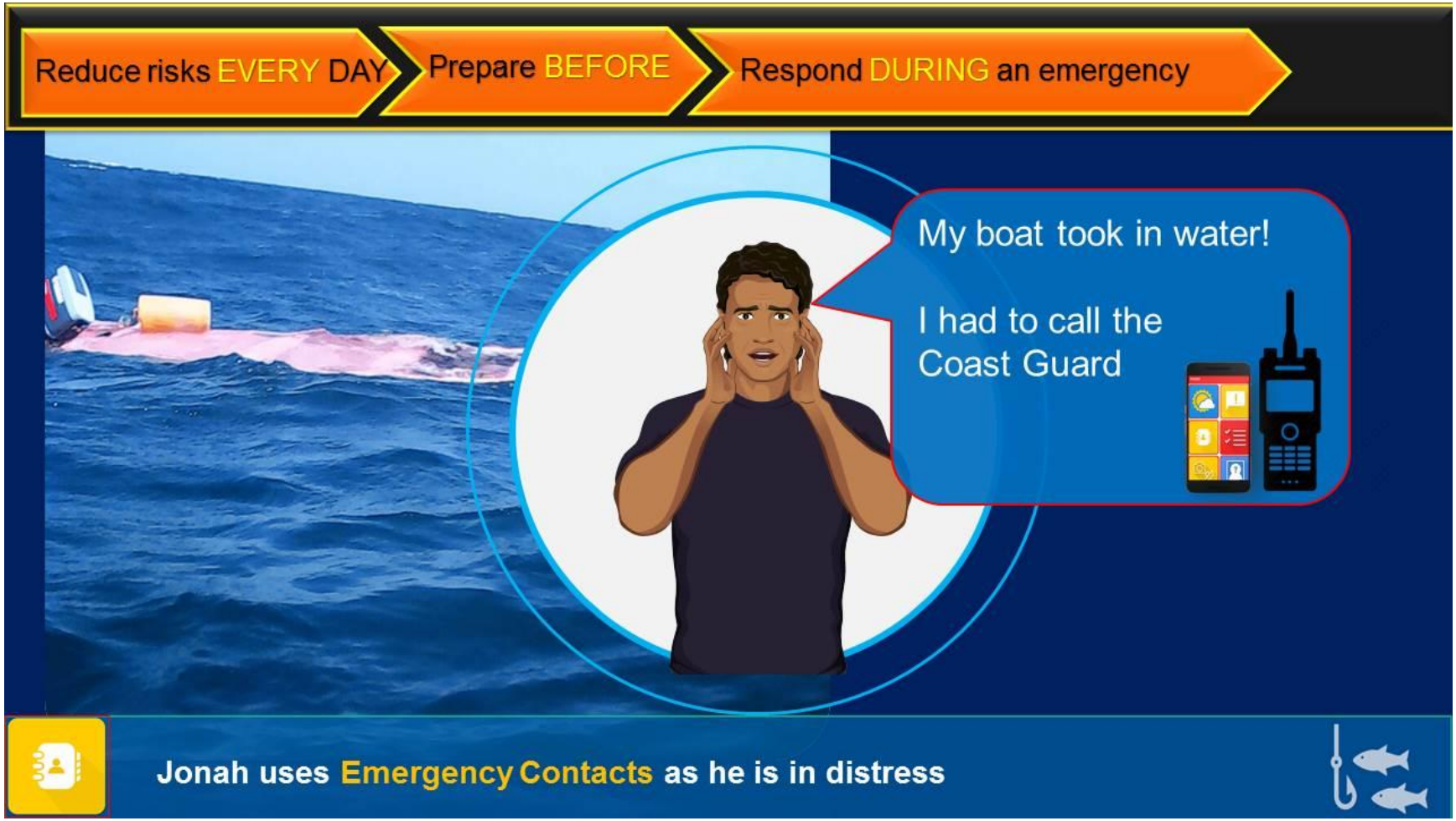

Mitigation
Reports
Show 10 entries
Search:
Description
Reported By
Category
Location
Type
Date
Sargassum for so
Jonah Charles
unspecified
12.12,-61.62
image/*
2018-02-12 22:26:43
Showing 1 to 1 of 1 entries
Previous
Next
Kalico Shopping Centre
Rubis Grenville Gas Station
Grenville Bay
All FEWER admins track sargassum as a pain point for fishers in LEK

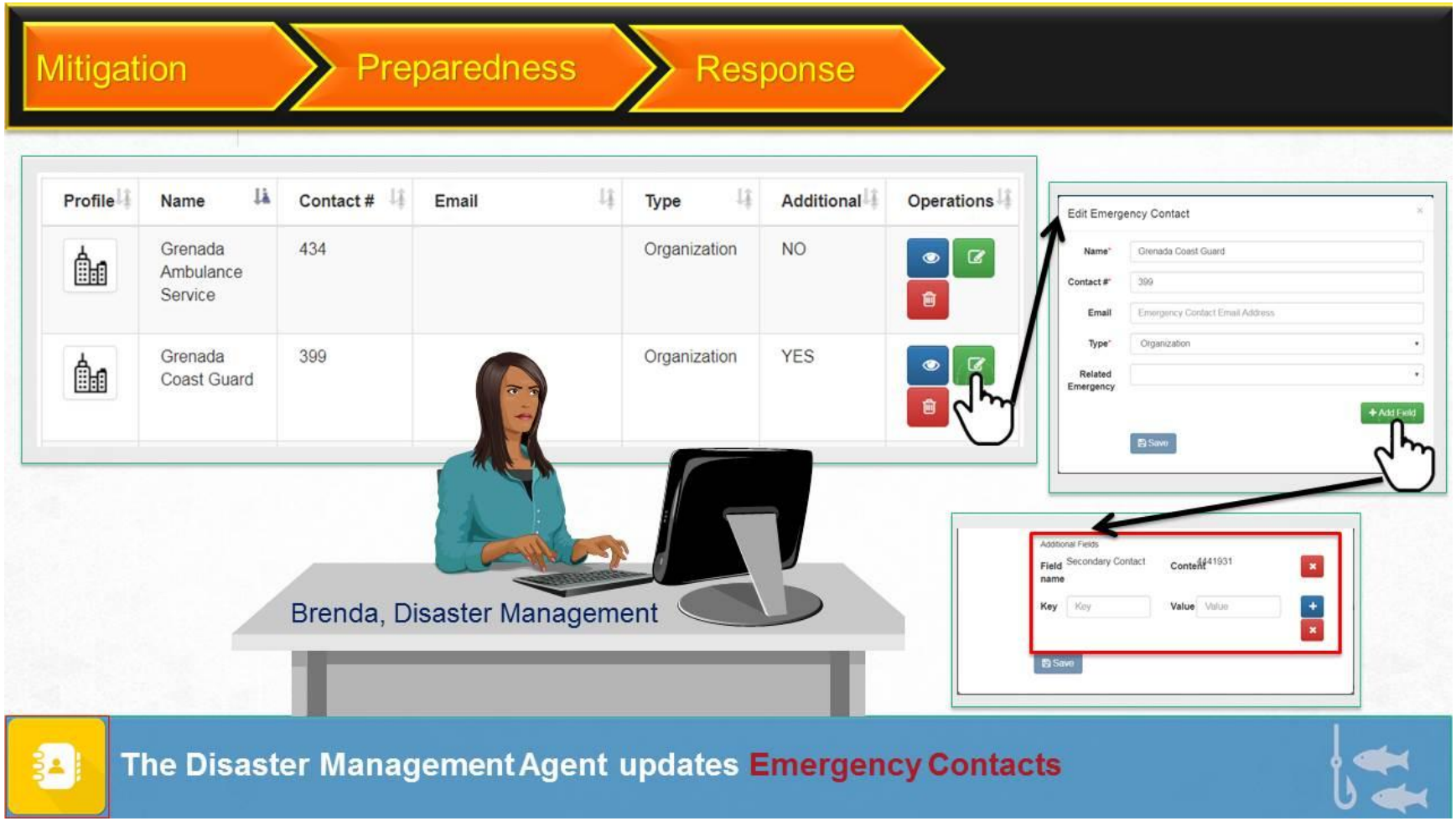

Reduce risks EVERY DAY
I went to fish near St. Vincent
Weather

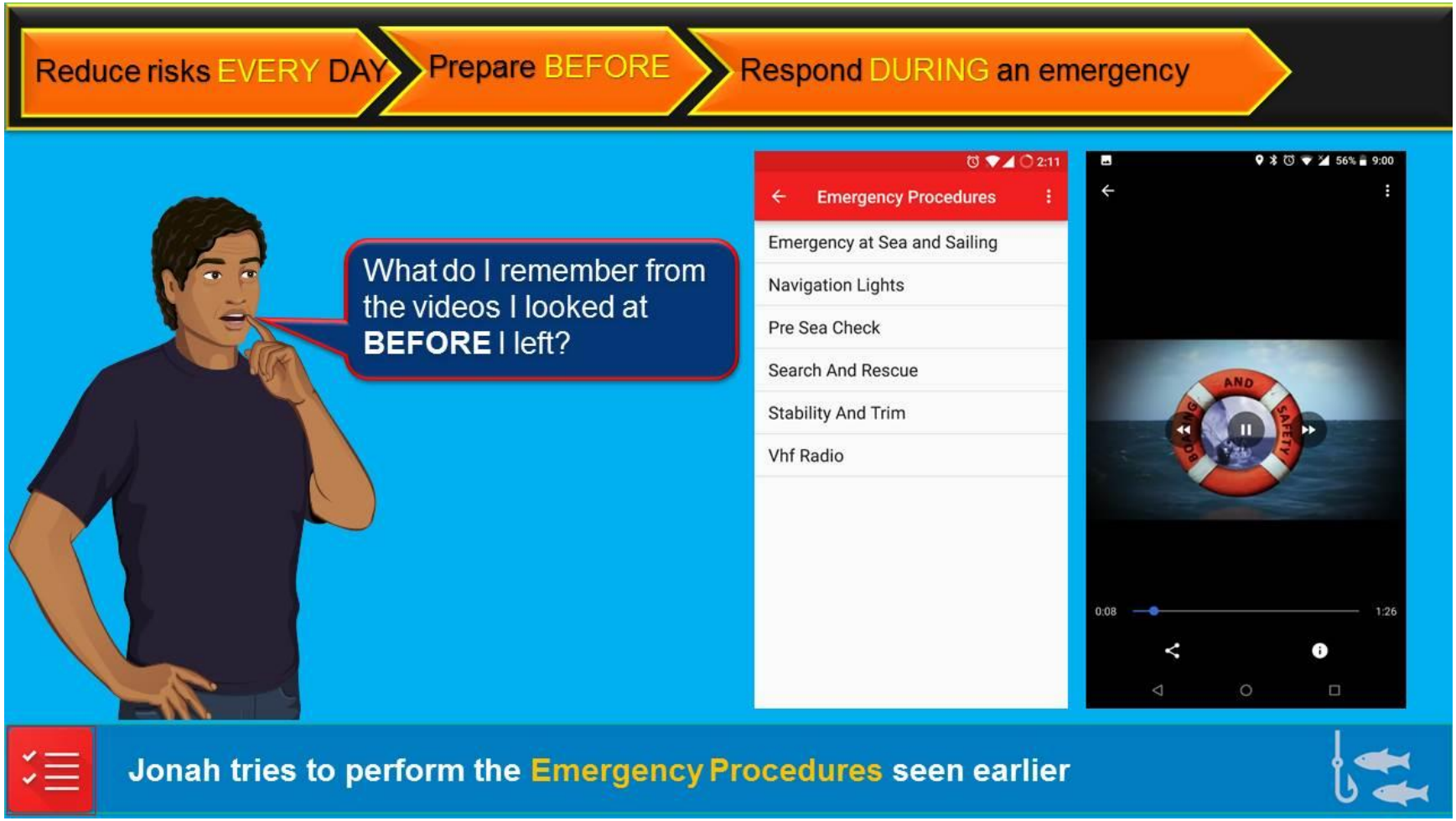

Mitigation
Preparedness
Show 10 entries
Search:
Source
Country
Info Type
Source Type
Interval
Duration
Last Reading
Date Created
Operations
Grenada - MET Office
Grenada
Weather
Website
Every 6 Hours
Single Day
2018-02-14 03:12:37
2017-08-22 20:57:24
World Tide - Grenada
Grenada
Oceanic
API
Once a day
Single Day
2018-01-26 17:23:56
2017-08-23 06:30:34
Showing 1 to 2 of 2 entries
Next
Date
Tuesday, February 13
Wind
NE'ly- ENE'LY @ 8-18 mph
Seas
Rough, waves 10 feet inopen waters.
Current temperature
75 °F
Sunrise
06:29
Pressure
1016 hPa
Marcus, Meterological Officer
Met. officer uses Weather to update weather conditions


Reduce risks EVERY DAY
Prepare BEFORE an emergency
On my way back, I could tell the sea condition was worsening.
Alerts

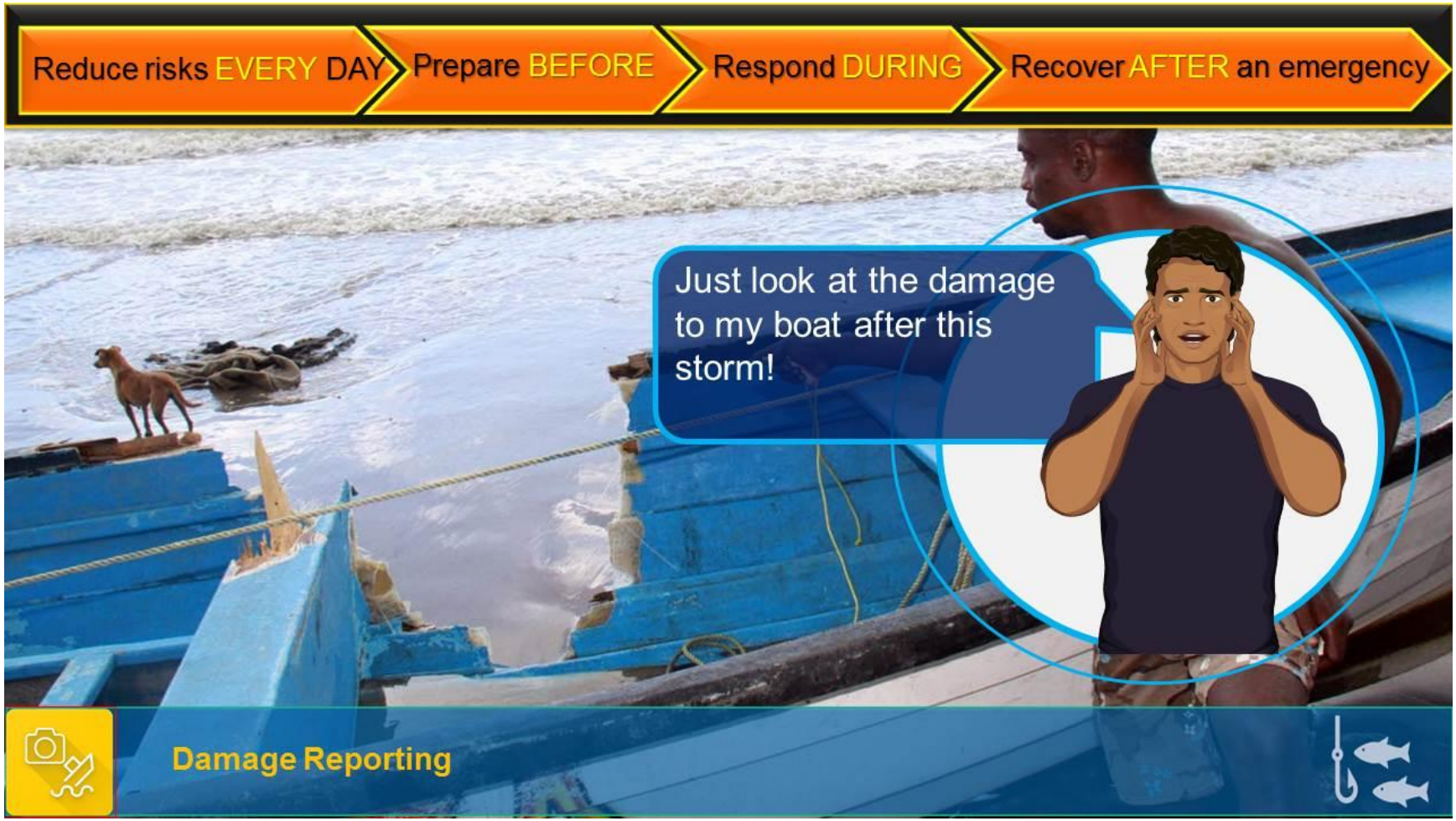

Mitigation
Preparedness
Pending Community Alerts
Community alerts awaiting approval to broadcast to all FEWER users
Title
Created By
Severity
Location
Date
Rough Seas
Jonah Charles
2 - Bad
10.64,-61.40
2018-02-16 13:12:04
Details
Broadcast
Ignore
Showing 1 to 1 of 1 entries
Next
Broadcast Confirmation
Are you sure you want to broadcast this Alert?
Broadcast
Cancel
Disaster Management Agent confirms & broadcasts alert to fishers in other communities


Reduce risks EVERY DAY
Prepare BEFORE
Respond DURING an emergency
My boat took in water!
I had to call the Coast Guard
Jonah uses Emergency Contacts as he is in distress


Mitigation
Preparedness
Response
Profile
Name
Contact #
Email
Type
Additional
Operations
Grenada Ambulance Service
434
Organization
NO
Grenada Coast Guard
399
Organization
YES
Edit Emergency Contact
Name*
Grenada Coast Guard
Contact #*
399
Email
Emergency Contact Email Address
Type*
Organization
Related Emergency
Add Field
Save
Additional Fields
Field name
Secondary Contact
Content
1241931
Key
Value
Brenda, Disaster Management
The Disaster Management Agent updates Emergency Contacts

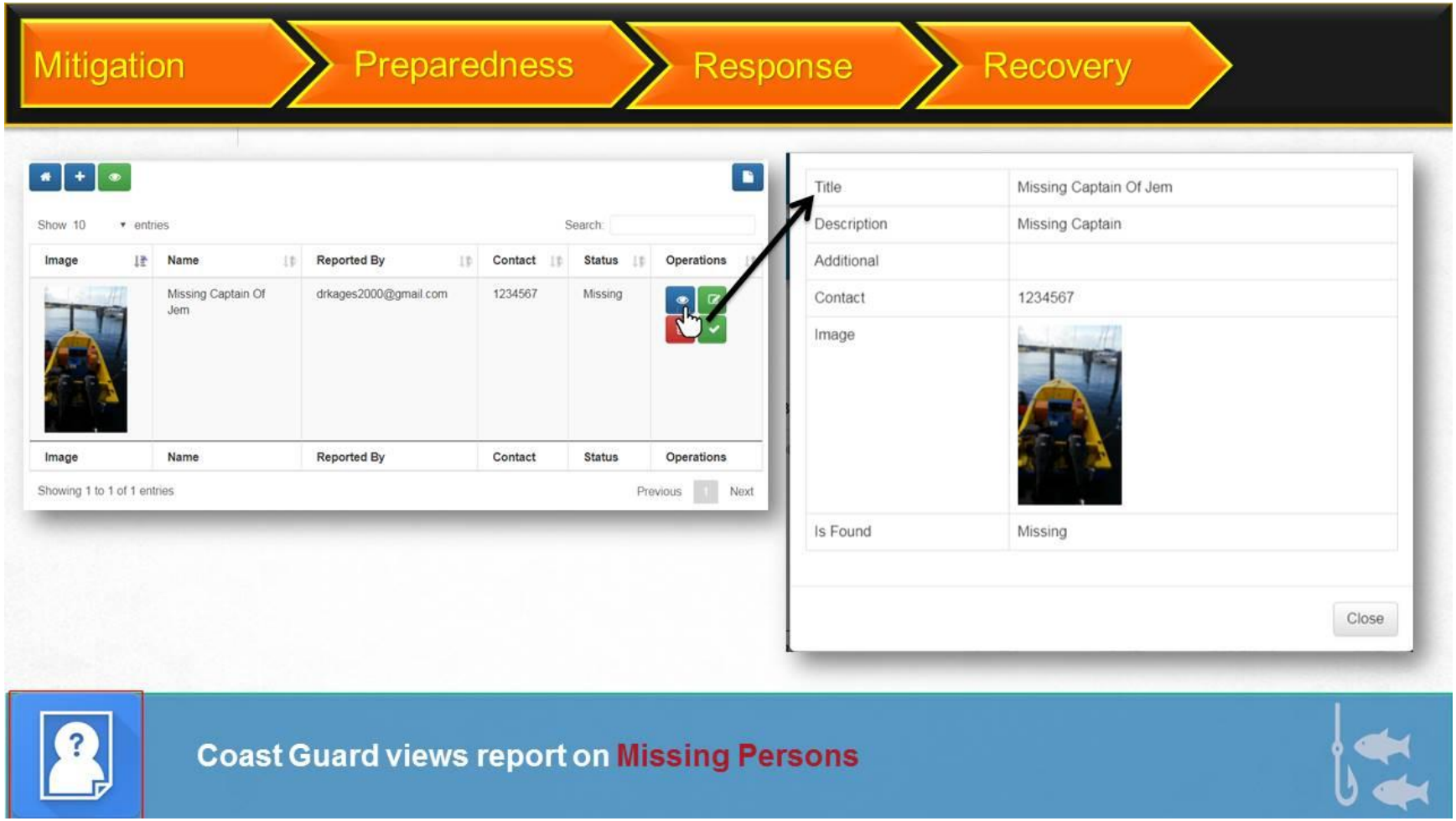

Reduce risks EVERY DAY
Prepare BEFORE
Respond DURING an emergency
What do I remember from the videos I looked at BEFORE I left?
Emergency Procedures
Emergency at Sea and Sailing
Navigation Lights
Pre Sea Check
Search And Rescue
Stability And Trim
Vhf Radio
0:08
1:26
Jonah tries to perform the Emergency Procedures seen earlier

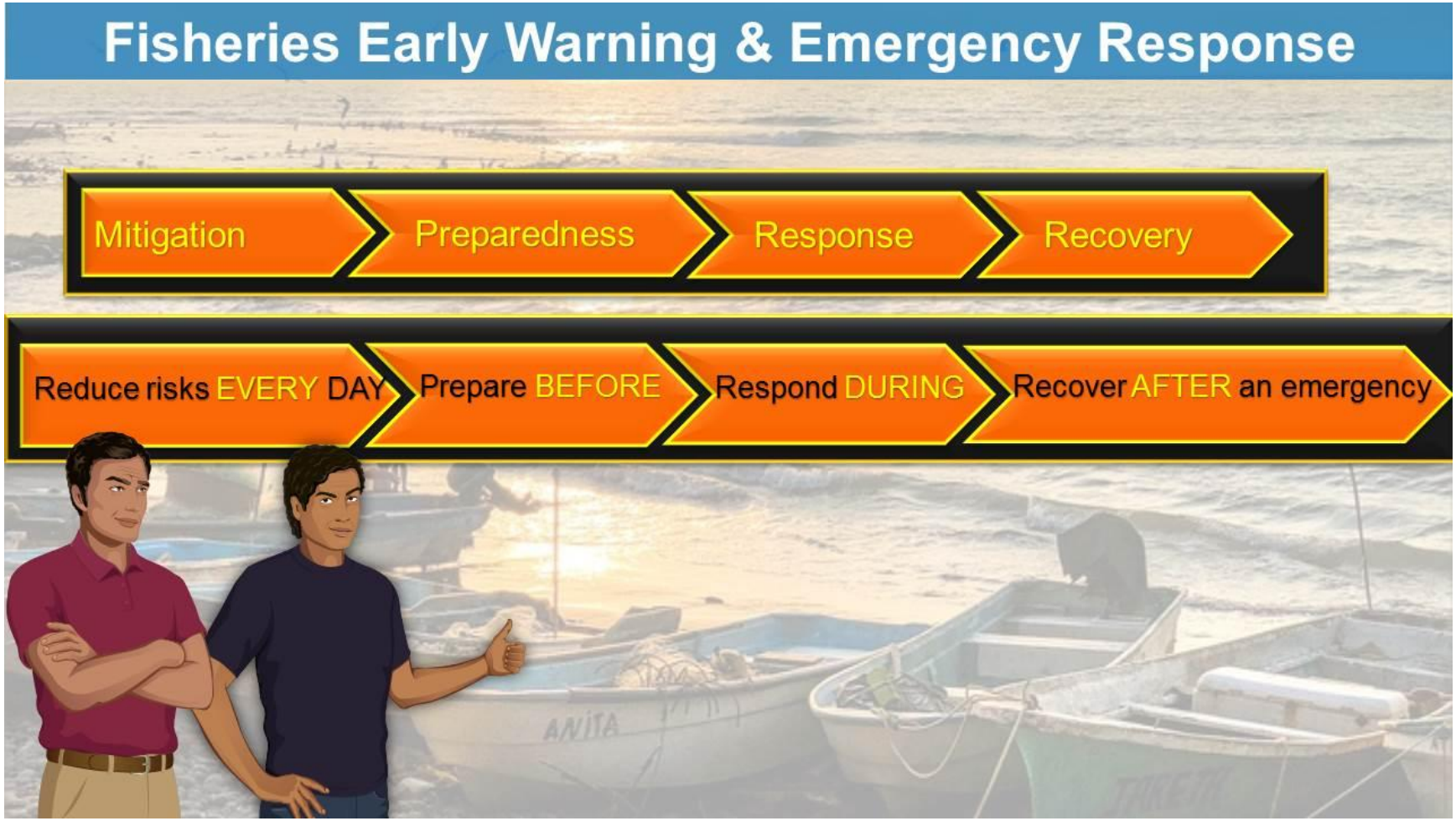

Mitigation
Preparedness
Response
Show 10 entries
Search:
Name
Type
Emergency at sea and sailing
Video
Navigation lights
Video
Pre sea check
Video
Search and rescure
Video
Stability and trim
Video
Vhf radio
Video
Showing 1 to 6 of 6 entries
Previous
1
Next
emergency at sea and sailing
BOATING
AND
SAFETY
0:07 / 1:26
Fisheries Officer uploads helpful videos on Emergency Procedures


Reduce risks EVERY DAY
Prepare BEFORE
Respond DURING
Recover AFTER an emergency
Just look at the damage to my boat after this storm!
Damage Reporting


Mitigation
Preparedness
Response
Recovery
Reports
Show 10 entries
Search:
Title
Reported By
Category
Location
Cost
Type
Date
Jonah
Jonah Charles
Boats
12.12,-61.61
1000
image/*
14/02/2018
Showing 1 to 1 of 1 entries
Previous
1
Next
Fisheries Officer views fisher reports & cost of losses in Damage Reporting


Reduce risks EVERY DAY
Prepare BEFORE
Respond DURING
Recover AFTER an emergency
Last year in the hurricane, Sheldon was missing at sea.
Fisherman missing after storm at sea
Jonah makes a report in Missing Persons to help the search


Mitigation
Preparedness
Response
Recovery
Show 10 entries
Search:
Image
Name
Reported By
Contact
Status
Operations
Missing Captain Of Jem
drkages2000@gmail.com
1234567
Missing
Showing 1 to 1 of 1 entries
Previous
Next
Title
Missing Captain Of Jem
Description
Missing Captain
Additional
Contact
1234567
Image
Is Found
Missing
Close
Coast Guard views report on Missing Persons


Fisheries Early Warning & Emergency Response
Mitigation
Preparedness
Response
Recovery
Reduce risks EVERY DAY
Prepare BEFORE
Respond DURING
Recover AFTER an emergency

Keeping in Touch

Get help and keep in touch on the **FEWER Admins GND Whatsapp** group:
https://tinyurl.com/FEWERadminsGND.

Refer to FEWER Manual:
https://tinyurl.com/FEWERAdminHelp

FEWER Admin Manual

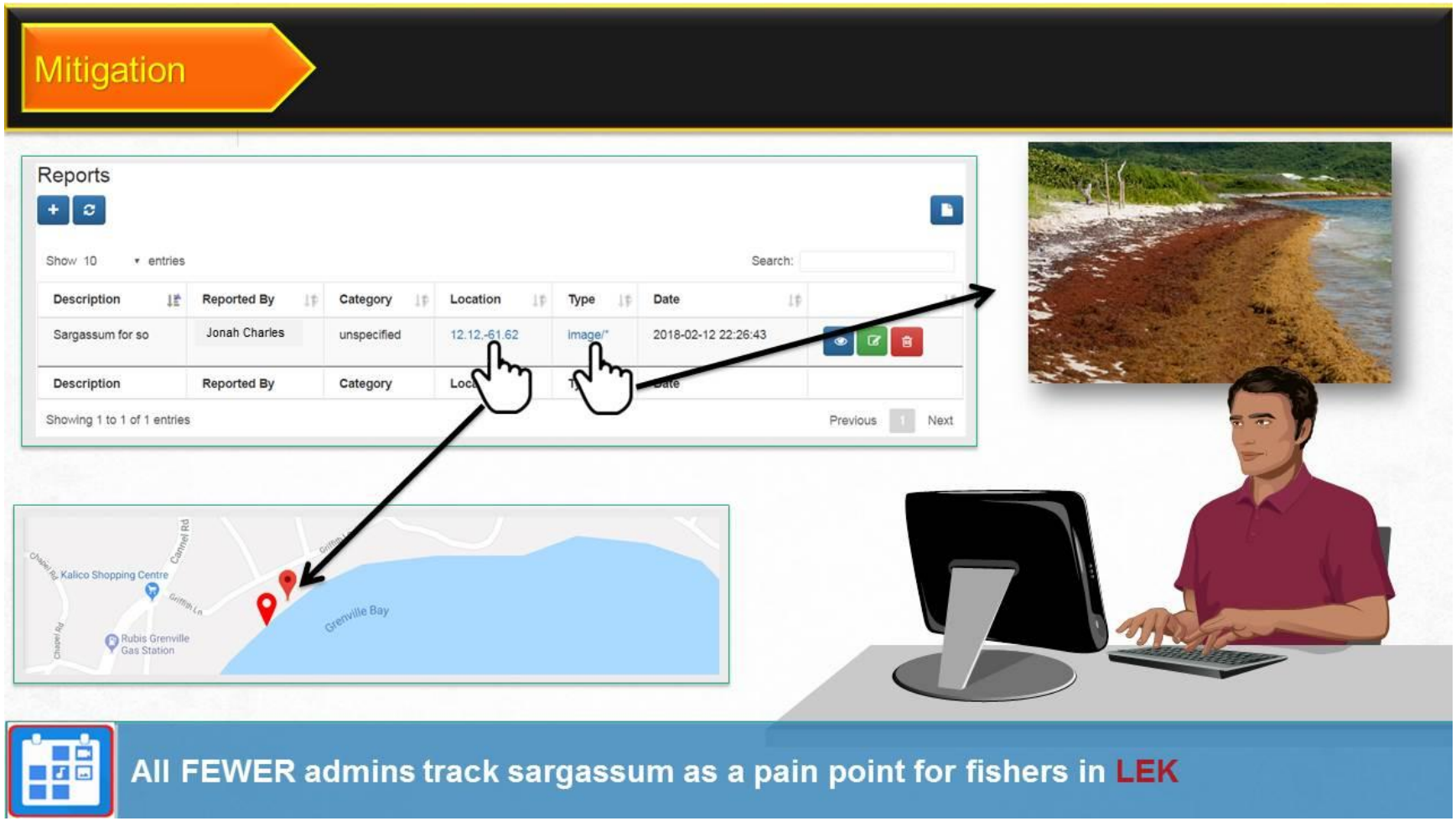
FEWER Admins on WhatsApp

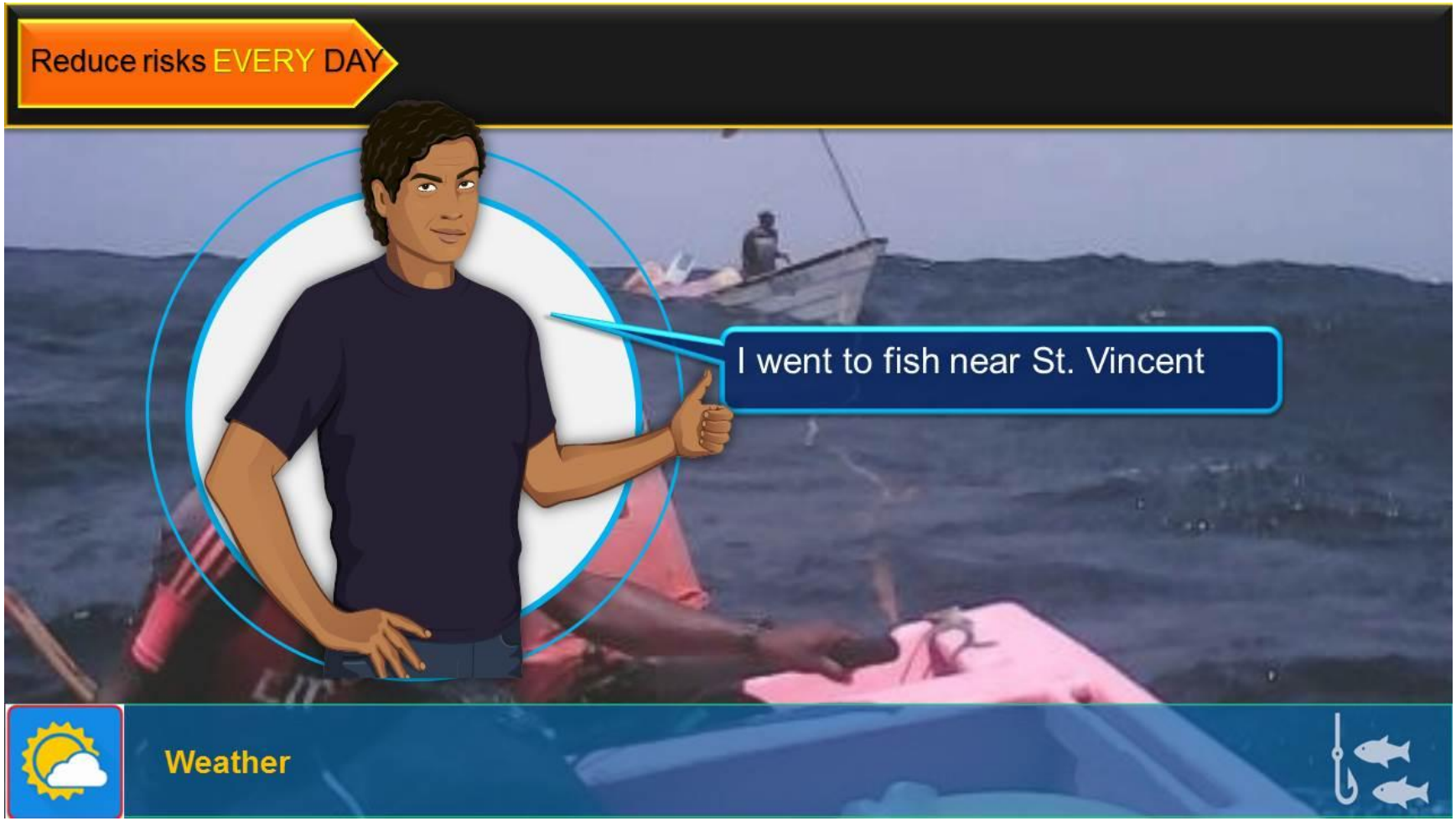
Appendix B.3. Hands-on Activity with Web-based Dashboard & Resources

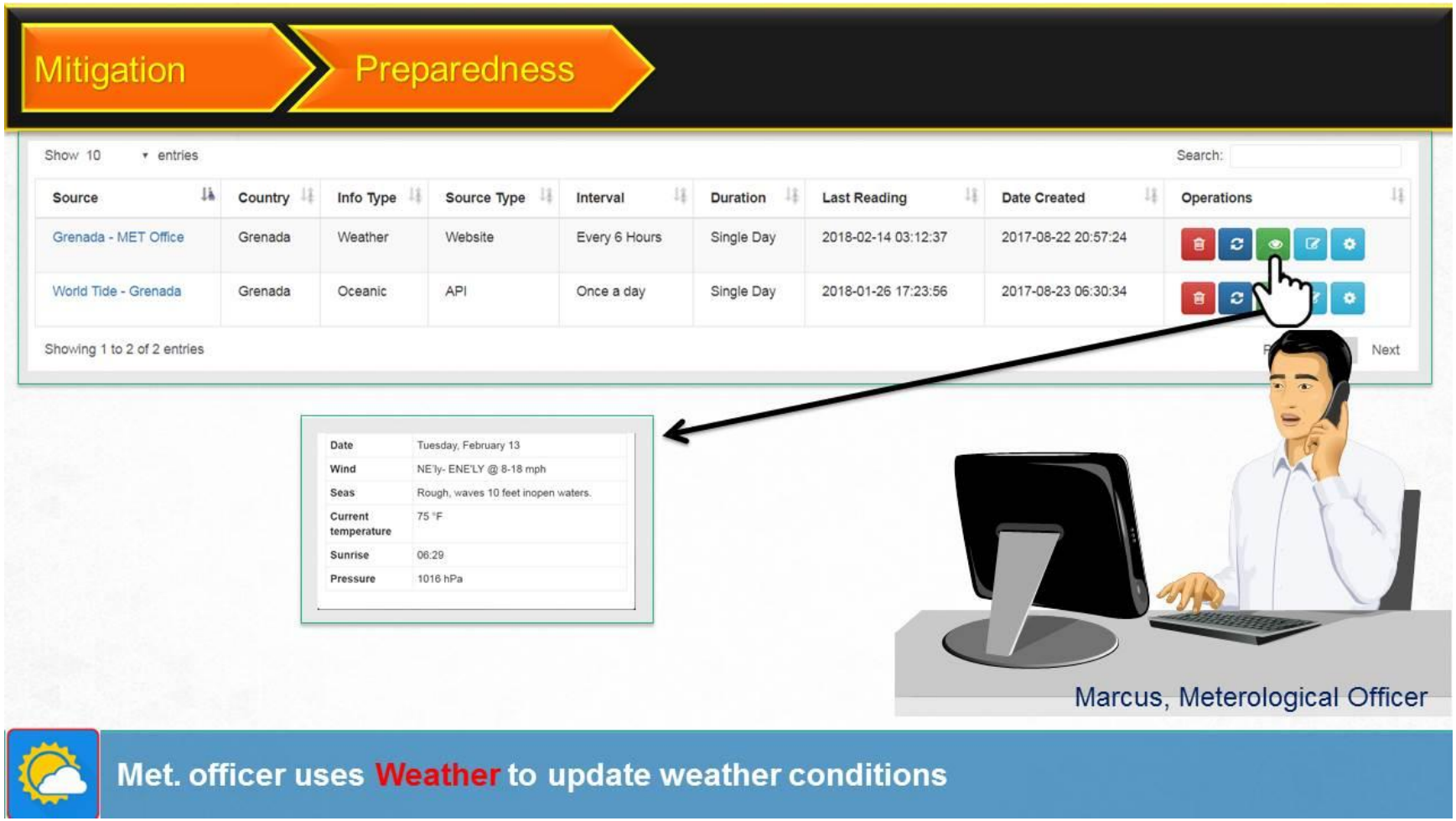

Mobile User App
Jonah, fisher from Grenville, Grenada

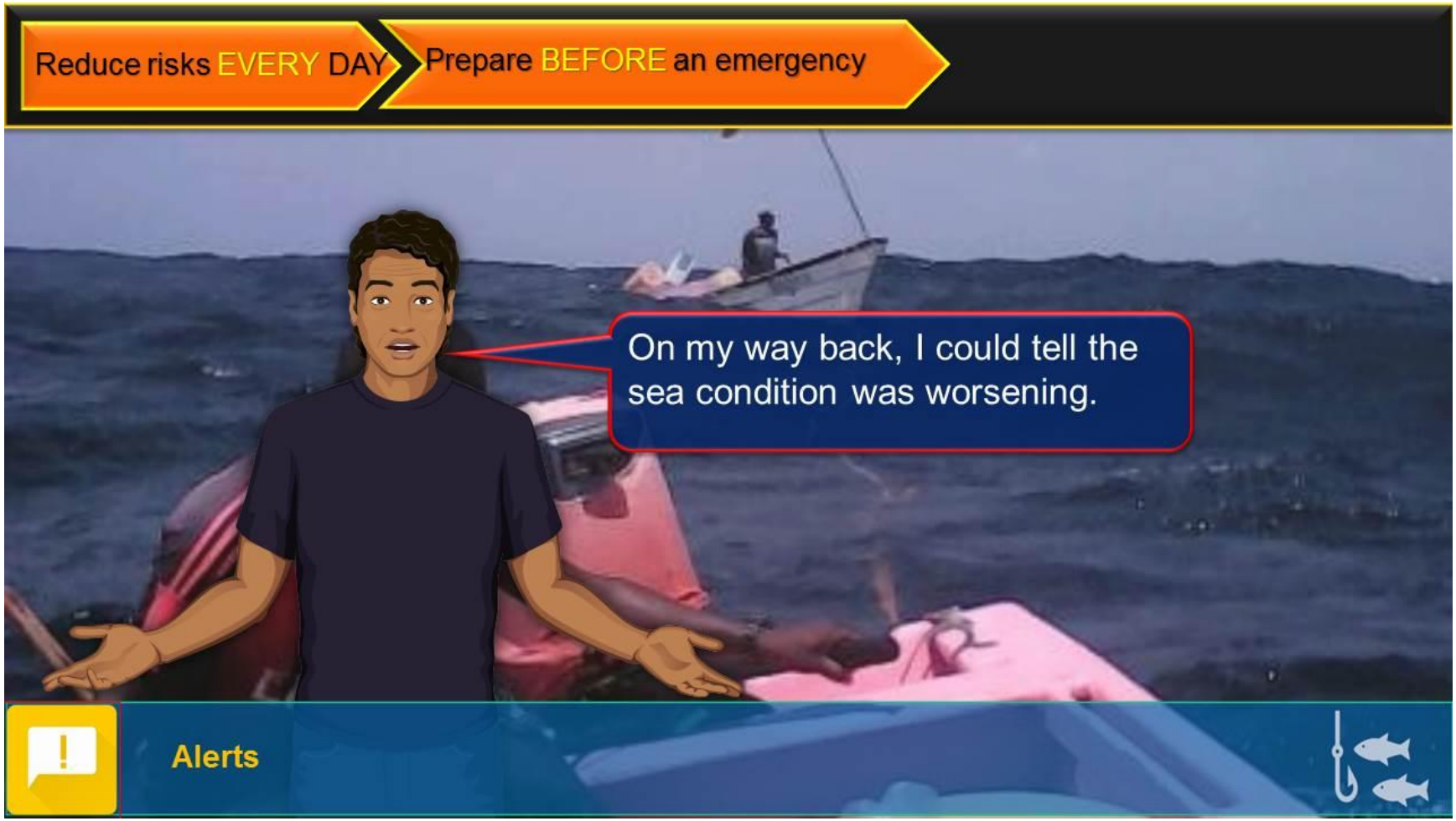

Mitigation
Preparedness
Response
Recovery
Local Ecological Knowledge
Weather
Alerts
Emergency Contacts
Emergency Procedures
Damage Reporting
Missing Persons
FEWER
Alerts
Damage Reporting
Emergency Contacts
Emergency Procedures
LEK
Missing Persons
Weather
Brent, Fisheries Officer, Grenada

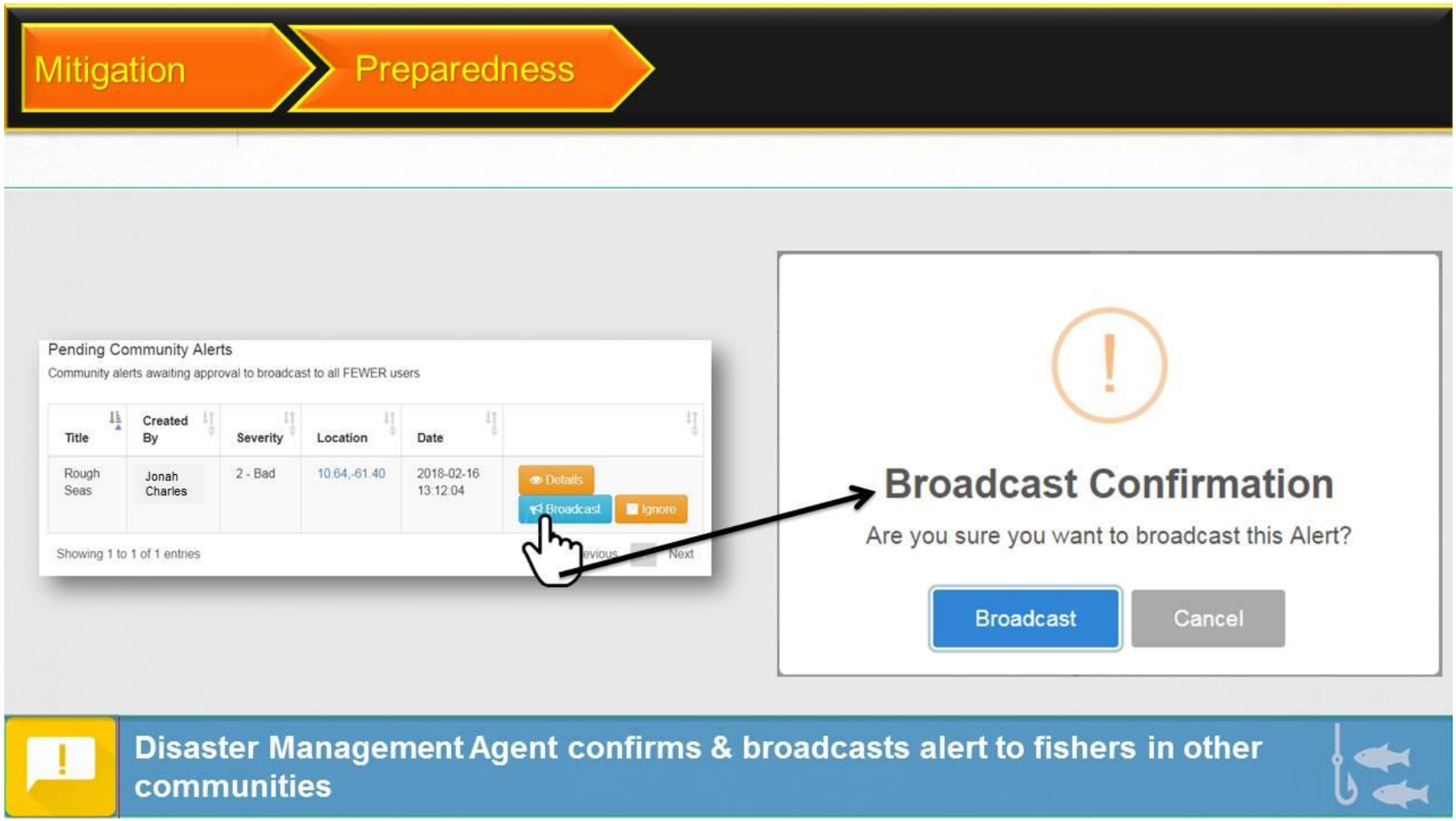

Reduce risks EVERY DAY
Oh gosh, look **sargassum** again!
I took a picture with my phone.
Jonah uses his photo in Local Ecological Knowledge (LEK)

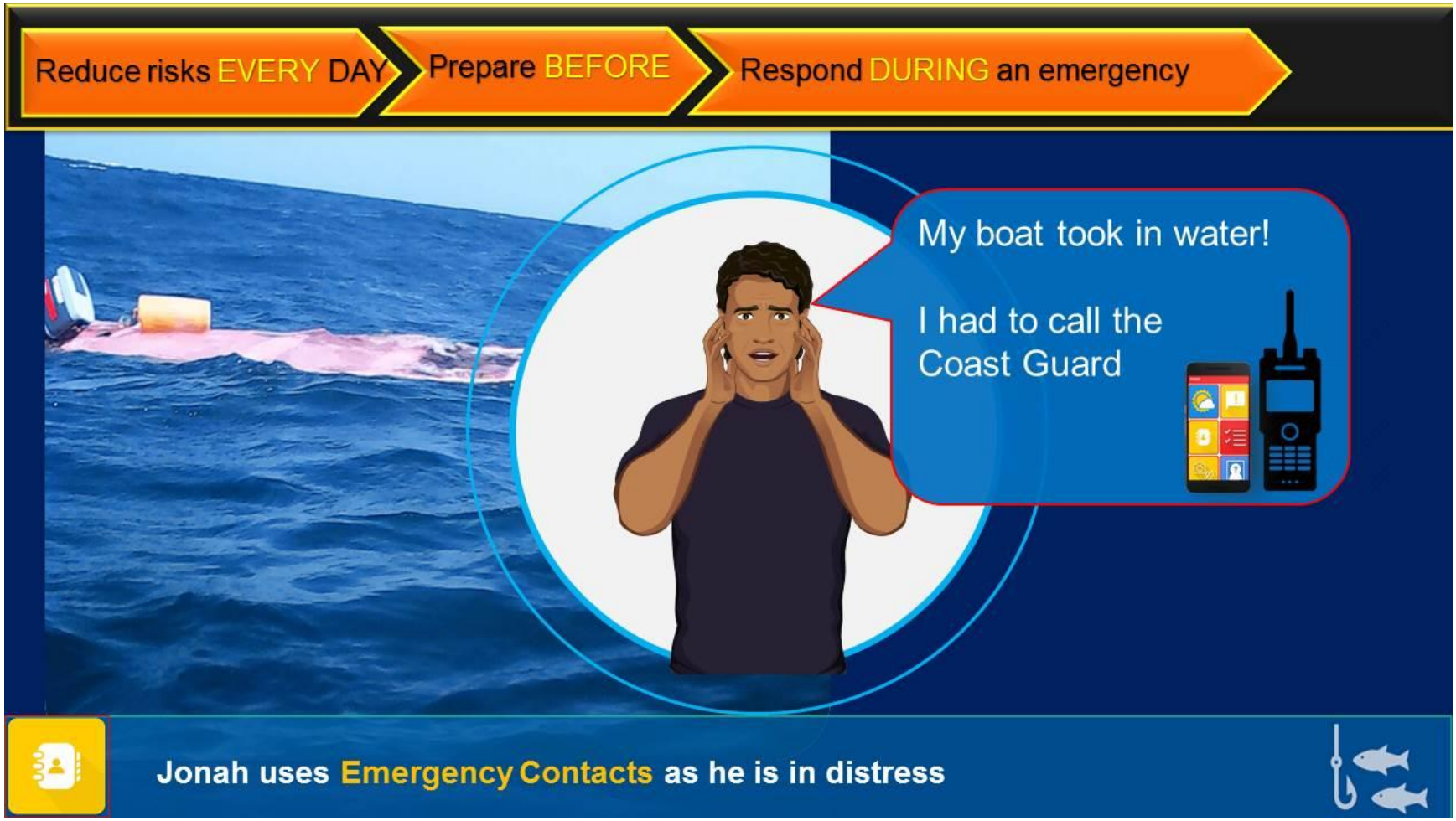

Mitigation
Reports
Show 10 entries
Search:
Description
Reported By
Category
Location
Type
Date
Sargassum for so
Jonah Charles
unspecified
12.12,-61.62
image/*
2018-02-12 22:26:43
Showing 1 to 1 of 1 entries
Previous
Next
Kalico Shopping Centre
Rubis Grenville Gas Station
Grenville Bay
All FEWER admins track sargassum as a pain point for fishers in LEK

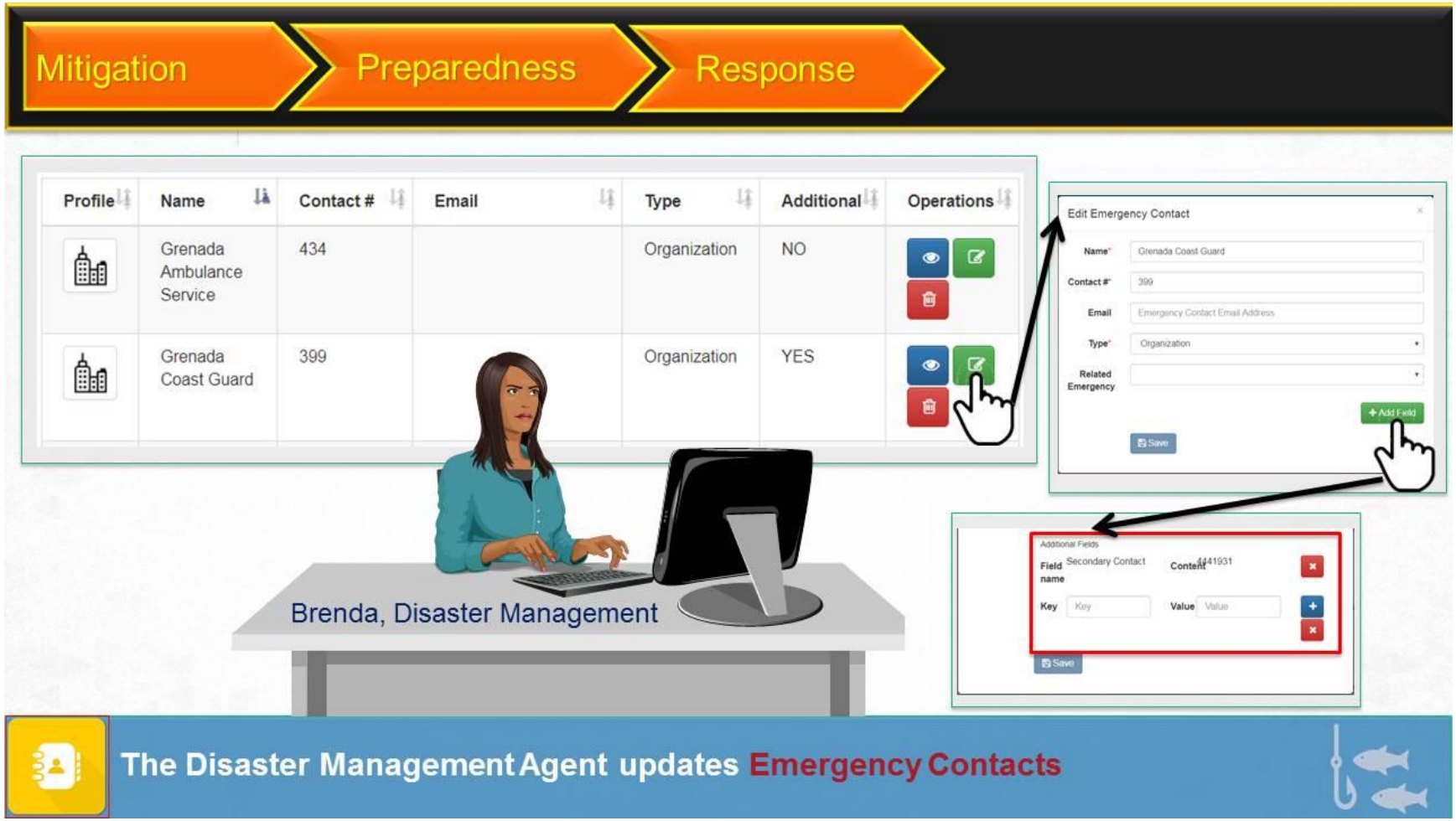

Reduce risks EVERY DAY
I went to fish near St. Vincent
Weather

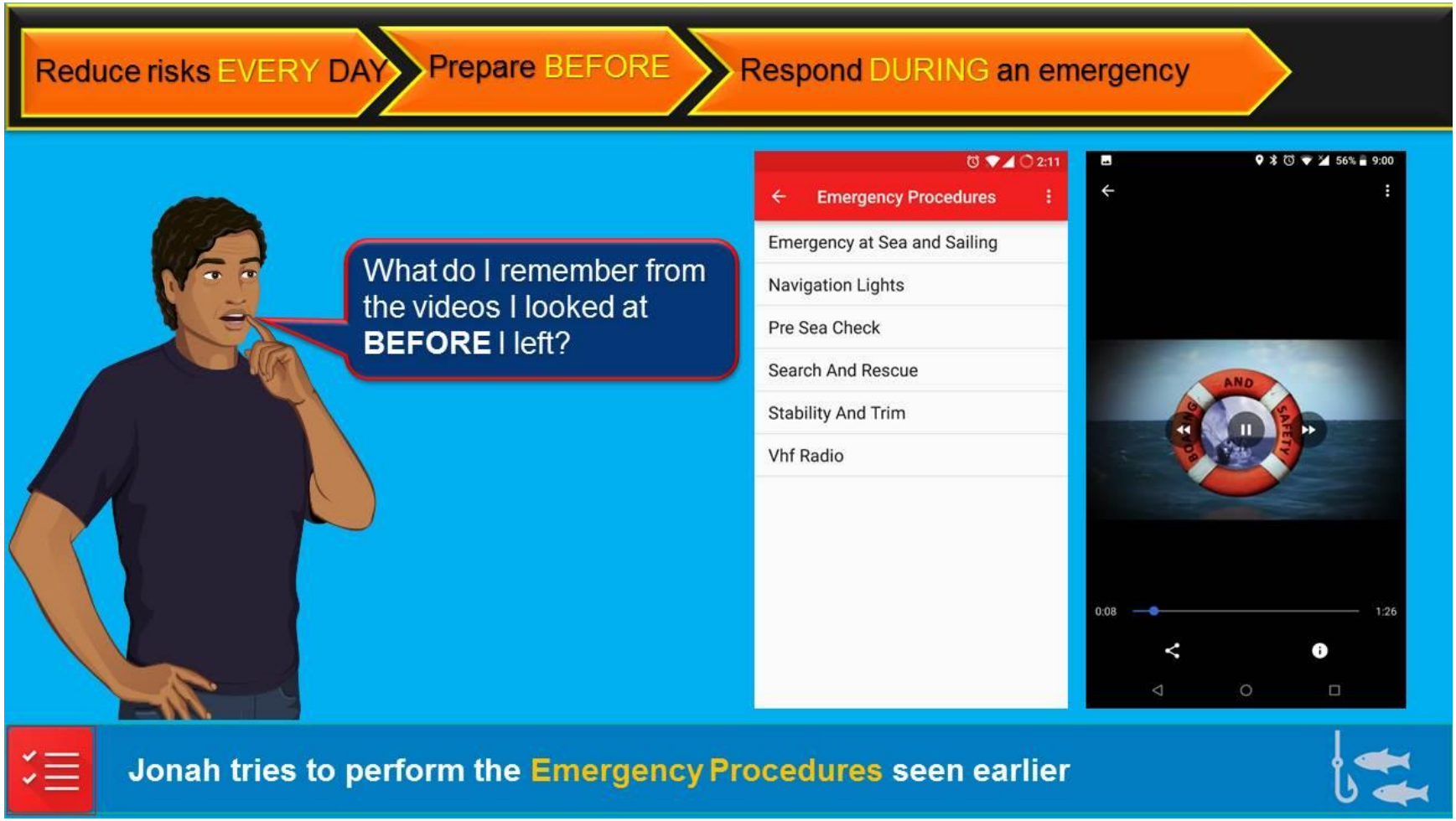

Mitigation
Preparedness
Show 10 entries
Search:
Source
Country
Info Type
Source Type
Interval
Duration
Last Reading
Date Created
Operations
Grenada - MET Office
Grenada
Weather
Website
Every 6 Hours
Single Day
2018-02-14 03:12:37
2017-08-22 20:57:24
World Tide - Grenada
Grenada
Oceanic
API
Once a day
Single Day
2018-01-26 17:23:56
2017-08-23 06:30:34
Showing 1 to 2 of 2 entries
Next
Date
Tuesday, February 13
Wind
NE'ly- ENE'LY @ 8-18 mph
Seas
Rough, waves 10 feet inopen waters.
Current temperature
75 °F
Sunrise
06:29
Pressure
1016 hPa
Marcus, Meterological Officer
Met. officer uses Weather to update weather conditions


Reduce risks EVERY DAY
Prepare BEFORE an emergency
On my way back, I could tell the sea condition was worsening.
Alerts

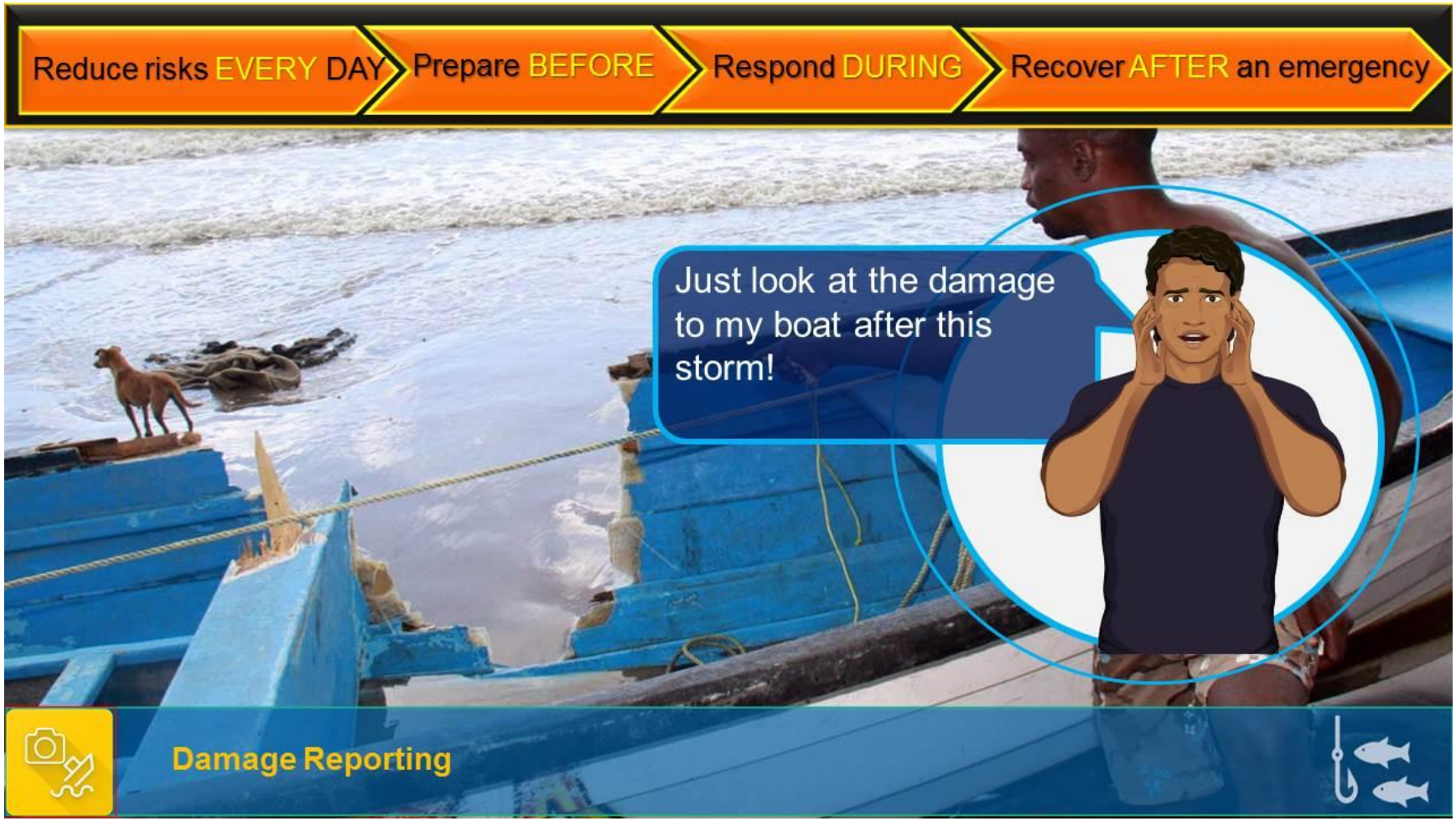

Mitigation
Preparedness
Pending Community Alerts
Community alerts awaiting approval to broadcast to all FEWER users
Title
Created By
Severity
Location
Date
Rough Seas
Jonah Charles
2 - Bad
10.64,-61.40
2018-02-16 13:12:04
Details
Broadcast
Ignore
Showing 1 to 1 of 1 entries
Next
Broadcast Confirmation
Are you sure you want to broadcast this Alert?
Broadcast
Cancel
Disaster Management Agent confirms & broadcasts alert to fishers in other communities


Reduce risks EVERY DAY
Prepare BEFORE
Respond DURING an emergency
My boat took in water!
I had to call the Coast Guard
Jonah uses Emergency Contacts as he is in distress


Mitigation
Preparedness
Response
Profile
Name
Contact #
Email
Type
Additional
Operations
Grenada Ambulance Service
434
Organization
NO
Grenada Coast Guard
399
Organization
YES
Edit Emergency Contact
Name*
Grenada Coast Guard
Contact #*
399
Email
Emergency Contact Email Address
Type*
Organization
Related Emergency
Add Field
Save
Additional Fields
Field name
Secondary Contact
Content
4241931
Key
Value
Brenda, Disaster Management
The Disaster Management Agent updates Emergency Contacts

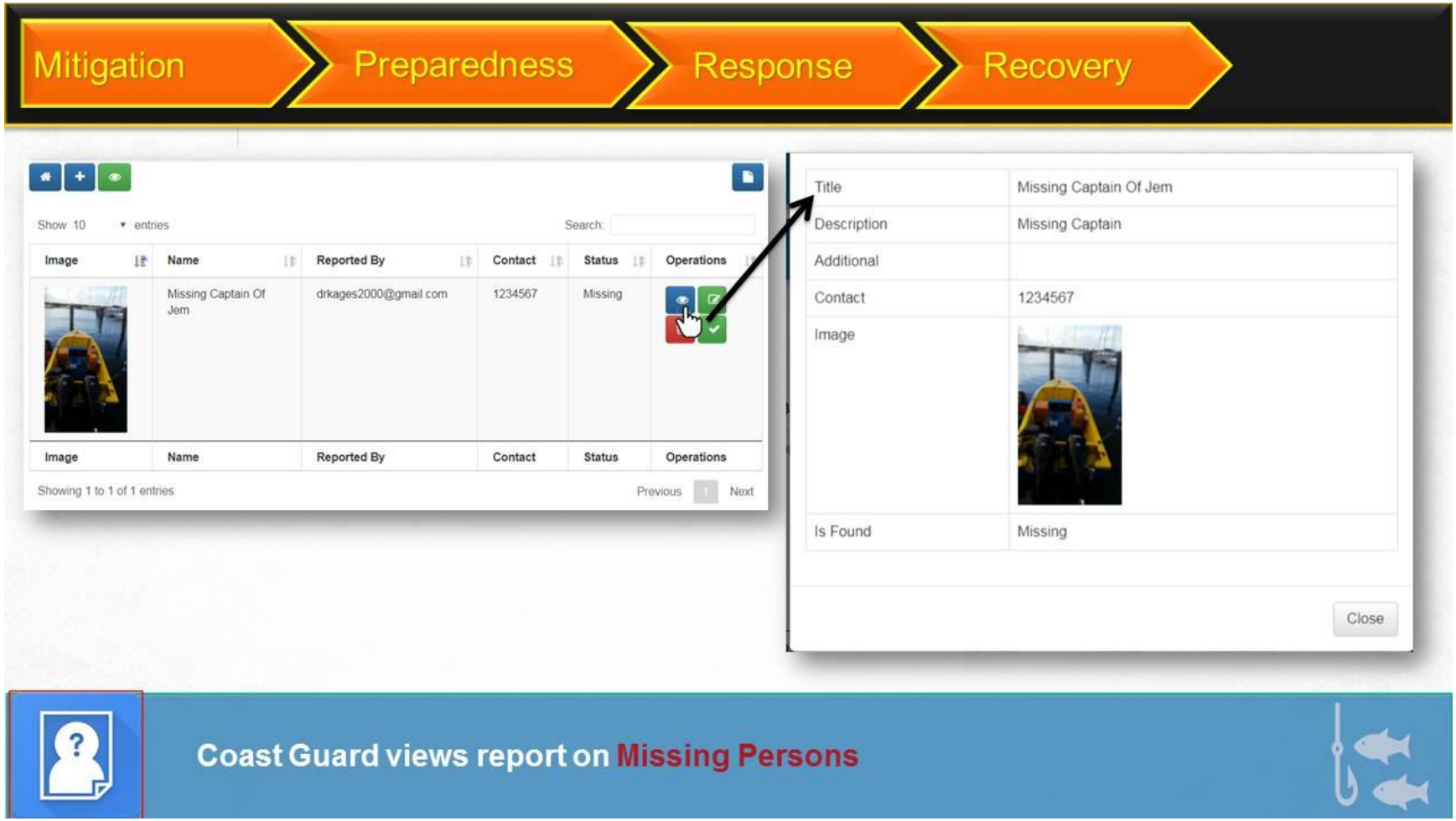

Reduce risks EVERY DAY
Prepare BEFORE
Respond DURING an emergency
What do I remember from the videos I looked at BEFORE I left?
Emergency Procedures
Emergency at Sea and Sailing
Navigation Lights
Pre Sea Check
Search And Rescue
Stability And Trim
Vhf Radio
0:08
1:26
Jonah tries to perform the Emergency Procedures seen earlier

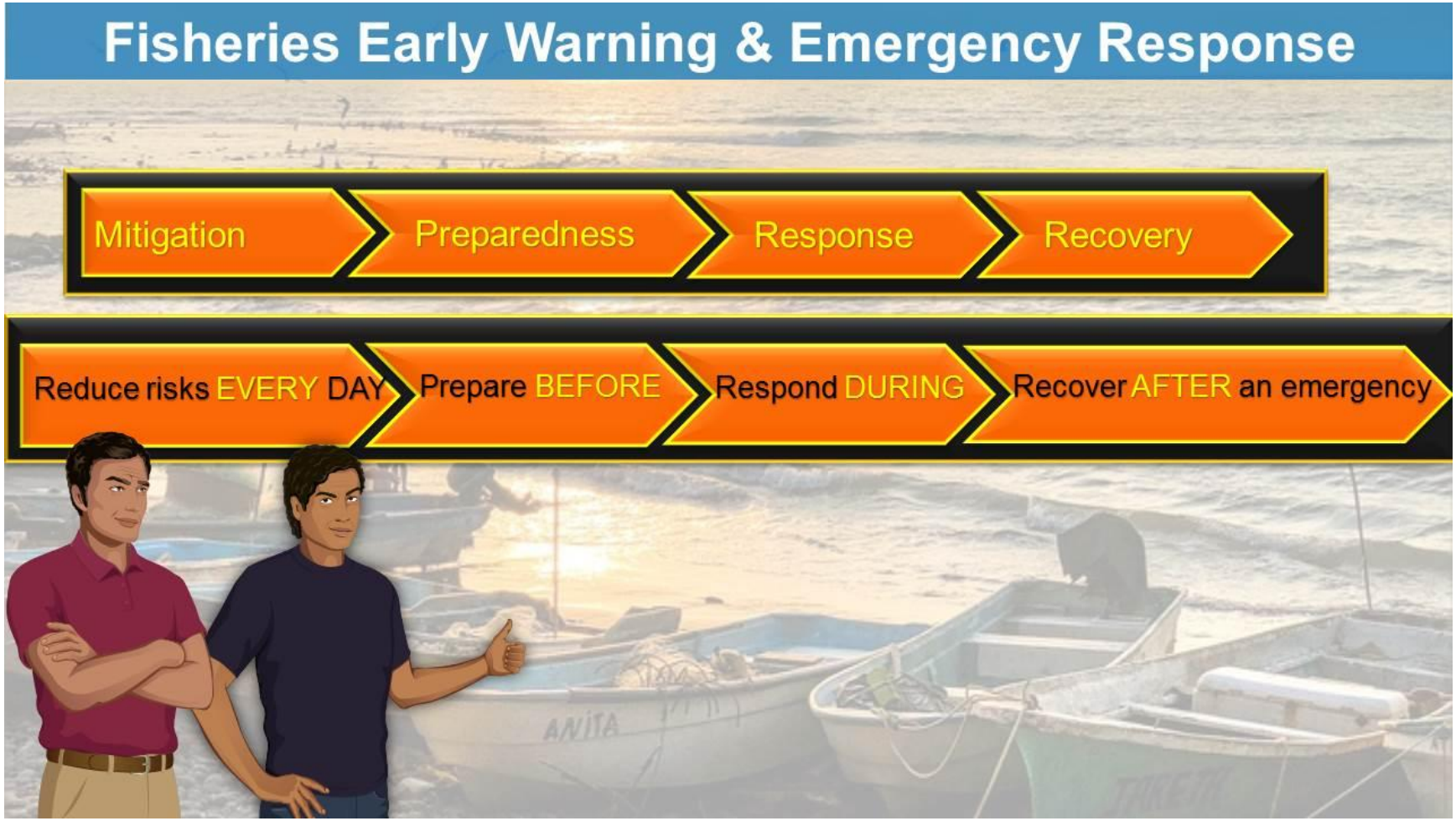

Mitigation
Preparedness
Response
Show 10 entries
Search:
Name
Type
Emergency at sea and sailing
Video
Navigation lights
Video
Pre sea check
Video
Search and rescure
Video
Stability and trim
Video
Vhf radio
Video
Showing 1 to 6 of 6 entries
Previous
1
Next
emergency at sea and sailing
BOATING
AND
SAFETY
0:07 / 1:26
Fisheries Officer uploads helpful videos on Emergency Procedures


Reduce risks EVERY DAY
Prepare BEFORE
Respond DURING
Recover AFTER an emergency
Just look at the damage to my boat after this storm!
Damage Reporting


Mitigation
Preparedness
Response
Recovery
Reports
Show 10 entries
Search:
Title
Reported By
Category
Location
Cost
Type
Date
Jonah
Jonah Charles
Boats
12.12,-61.61
1000
image/*
14/02/2018
Showing 1 to 1 of 1 entries
Previous
1
Next
Fisheries Officer views fisher reports & cost of losses in Damage Reporting


Reduce risks EVERY DAY
Prepare BEFORE
Respond DURING
Recover AFTER an emergency
Last year in the hurricane, Sheldon was missing at sea.
Fisherman missing after storm at sea
Jonah makes a report in Missing Persons to help the search


Mitigation
Preparedness
Response
Recovery
Show 10 entries
Search:
Image
Name
Reported By
Contact
Status
Operations
Missing Captain Of Jem
drkages2000@gmail.com
1234567
Missing
Showing 1 to 1 of 1 entries
Previous
Next
Title
Missing Captain Of Jem
Description
Missing Captain
Additional
Contact
1234567
Image
Is Found
Missing
Close
Coast Guard views report on Missing Persons


Fisheries Early Warning & Emergency Response
Mitigation
Preparedness
Response
Recovery
Reduce risks EVERY DAY
Prepare BEFORE
Respond DURING
Recover AFTER an emergency

Keeping in Touch

Get help and keep in touch on the **FEWER Admins GND Whatsapp** group:
https://tinyurl.com/FEWERadminsGND.

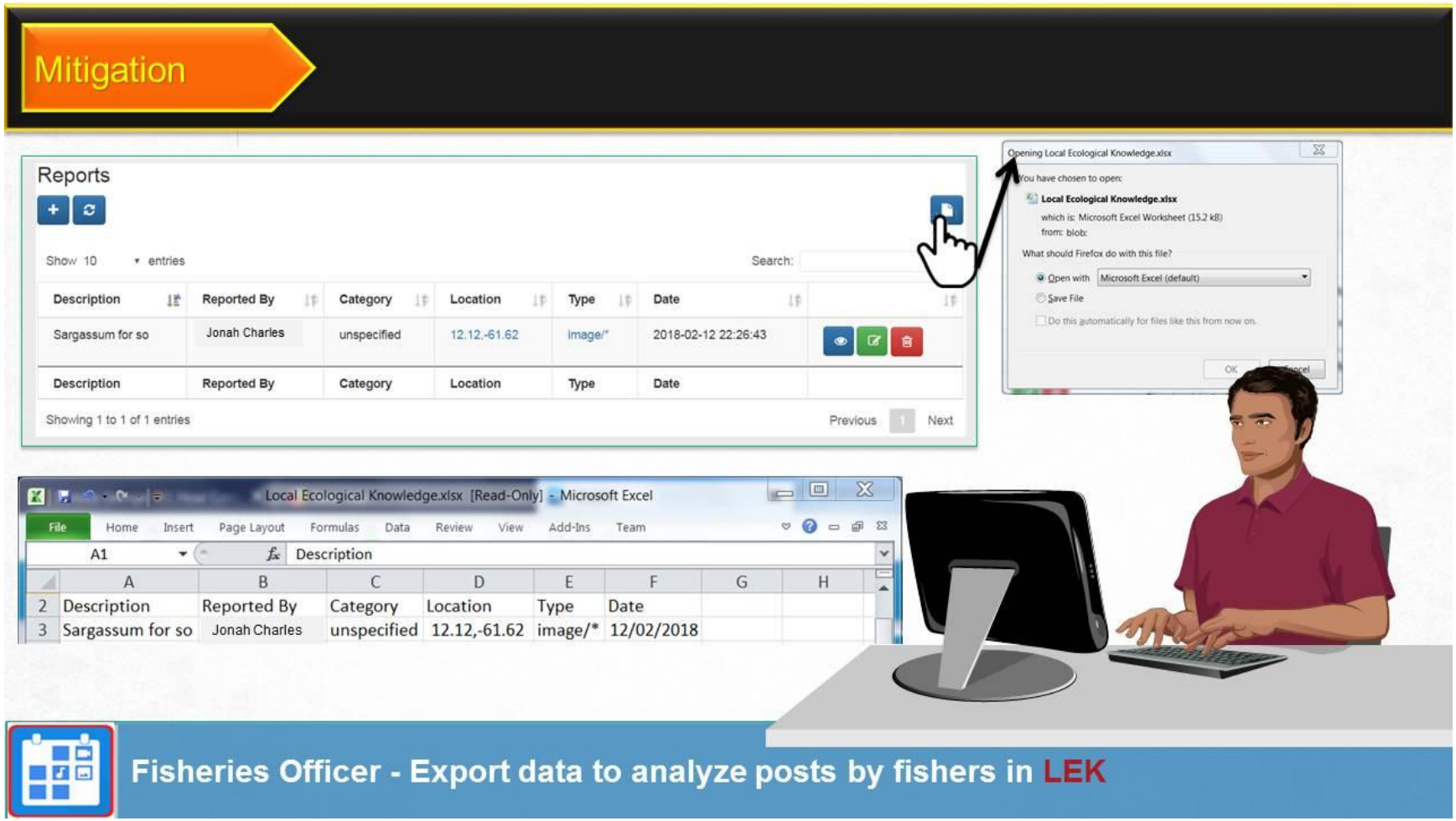
Refer to FEWER Manual:
https://tinyurl.com/FEWERAdminHelp

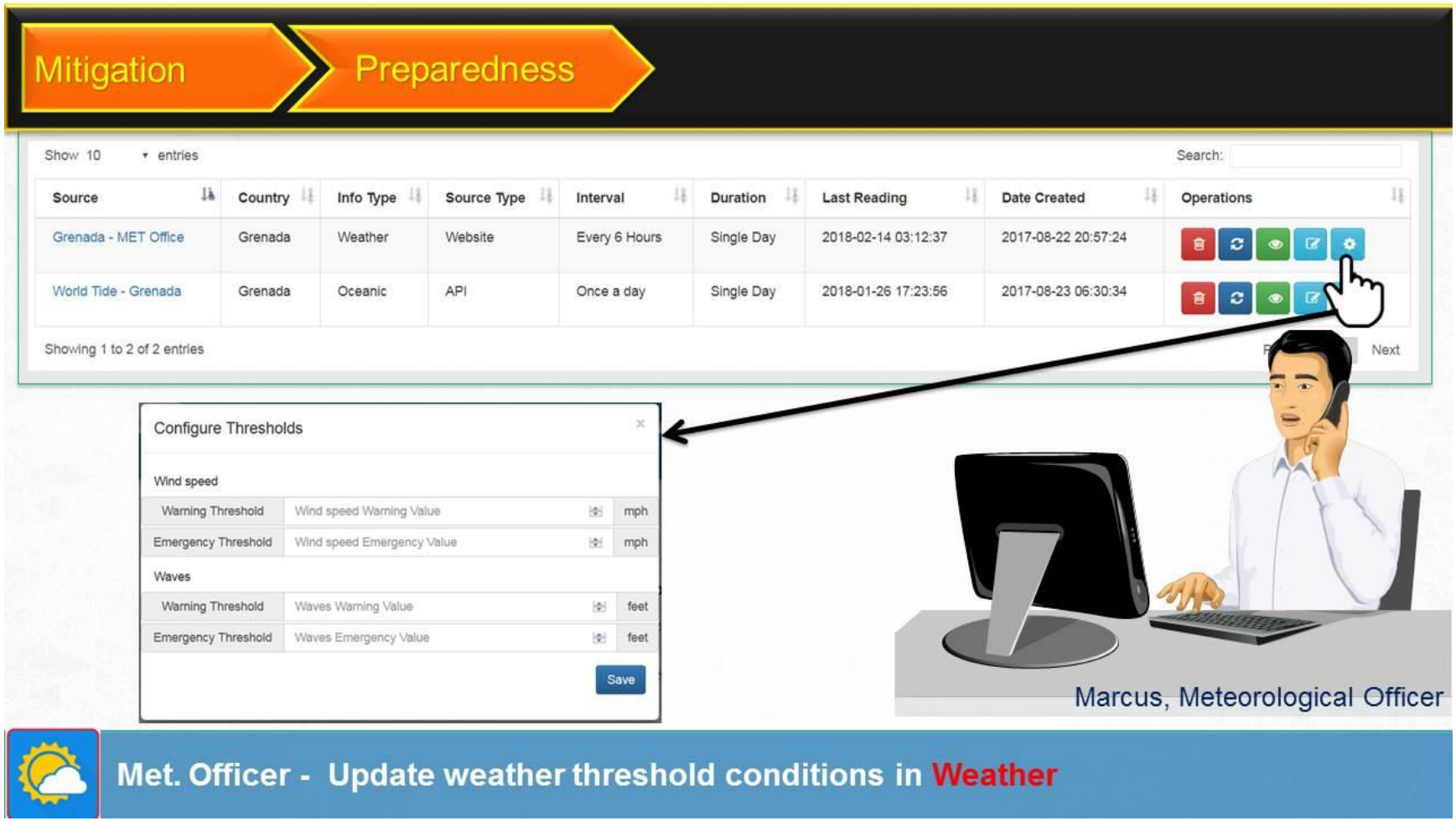
FEWER Admin Manual

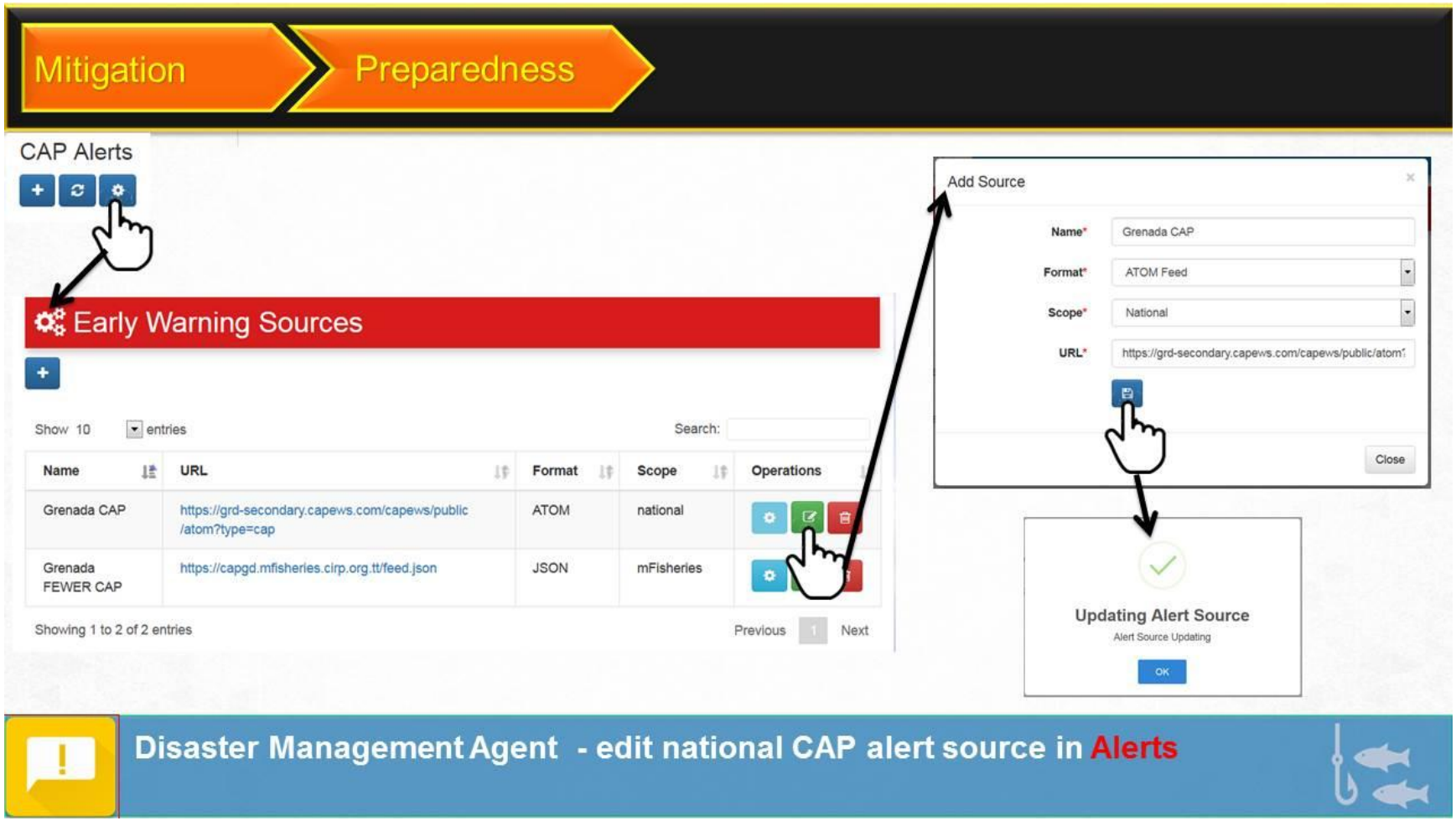
FEWER Admins on WhatsApp

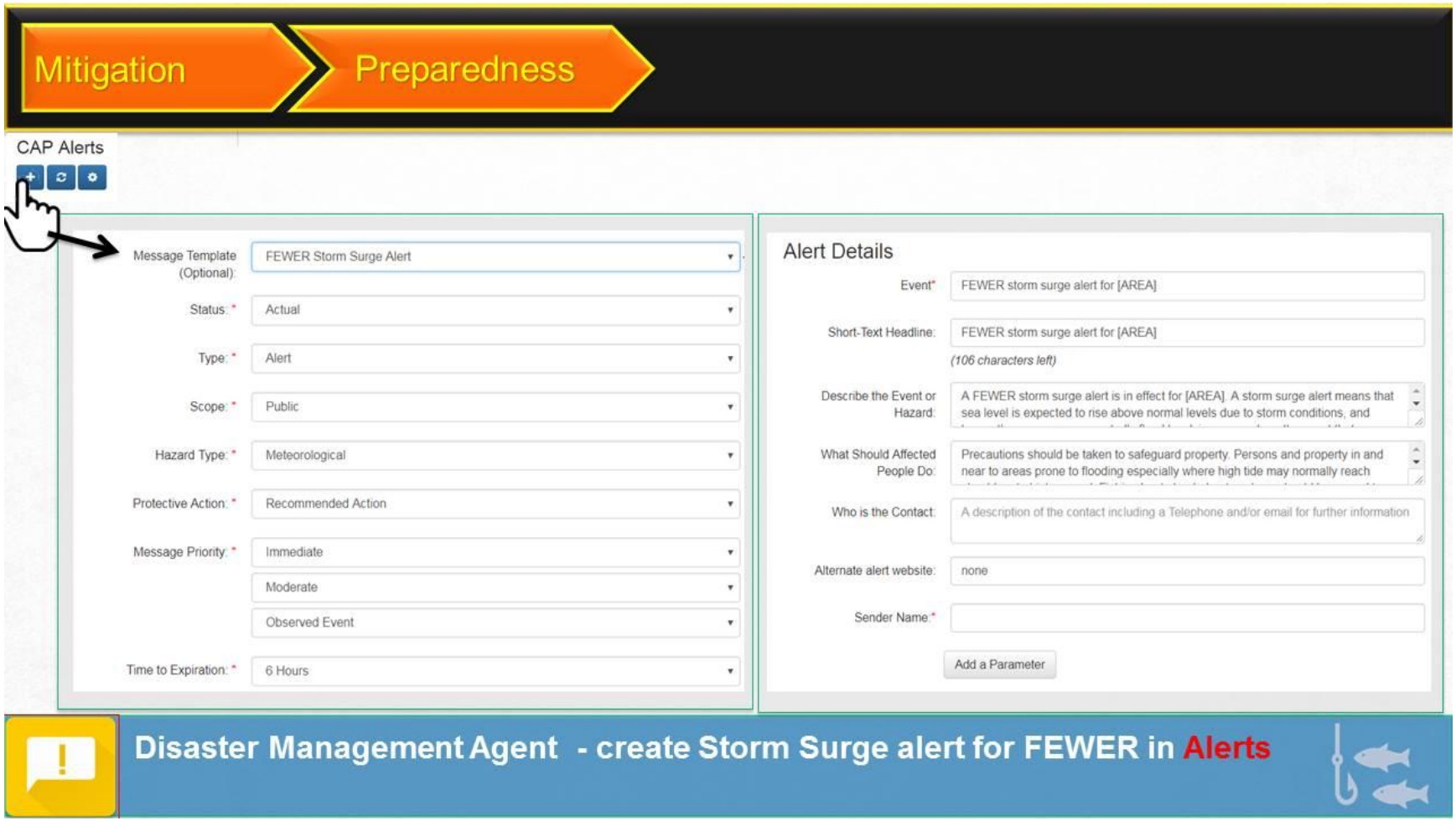
Appendix B.4. Hands-on FEWER Administrative Tasks: All

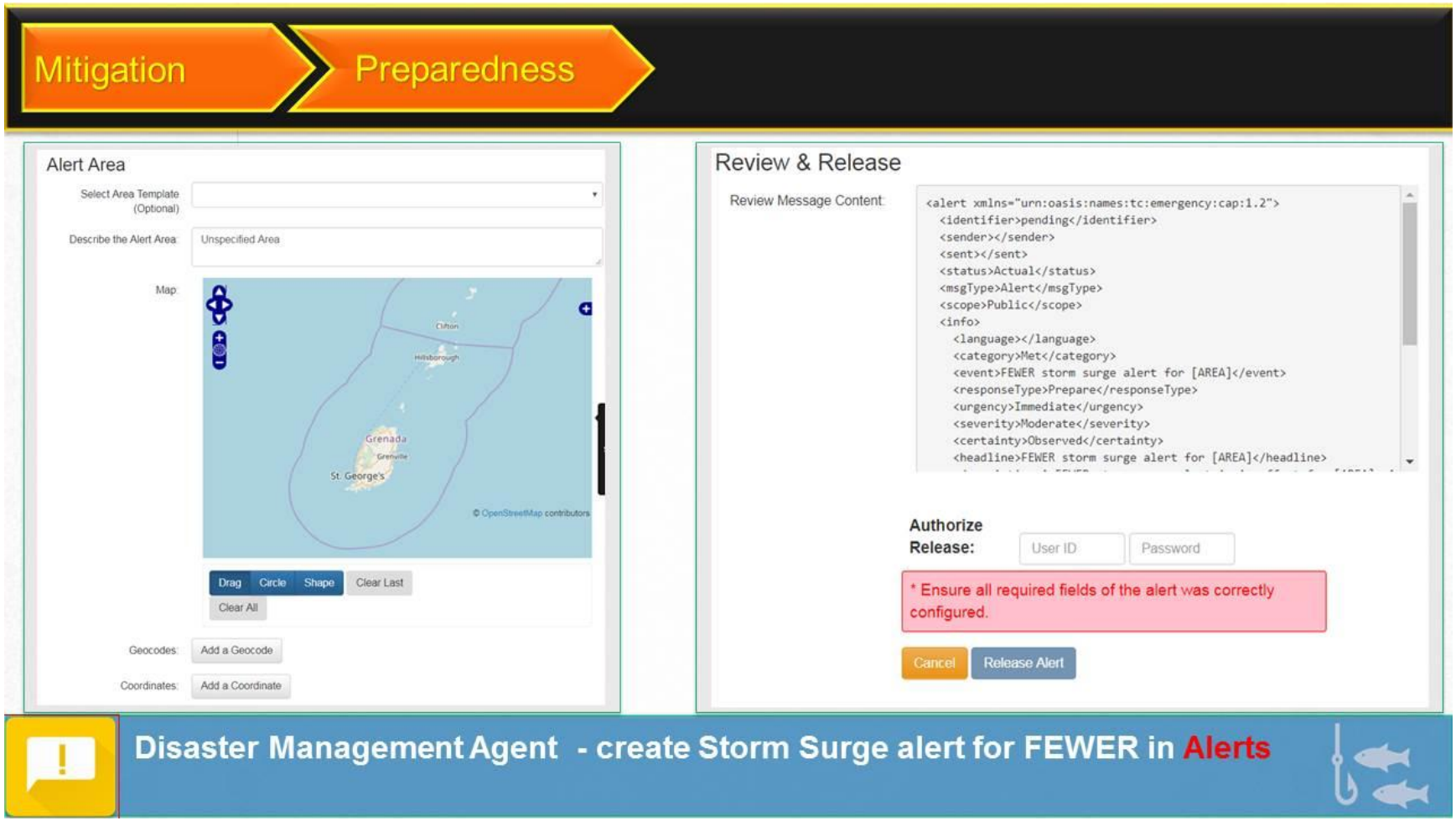

Mitigation
Preparedness
Response
Recovery
Local Ecological Knowledge
Weather
Emergency Contacts
Damage Reporting
Alerts
Emergency Procedures
Missing Persons
FEWER
Alerts
Damage Reporting
Emergency Contacts
Emergency Procedures
LEK
Missing Persons
Weather
Brent, Fisheries Officer, Grenada

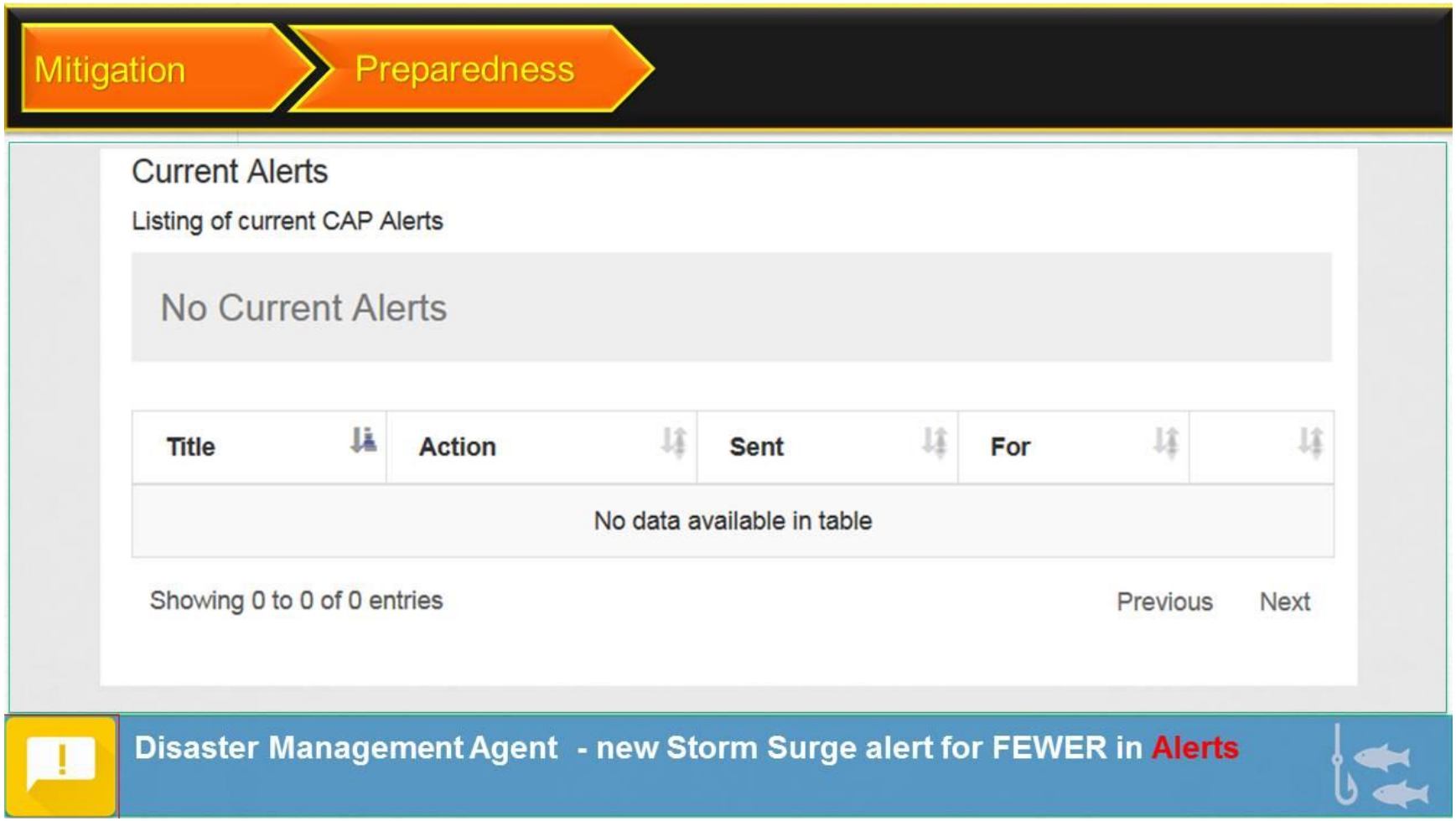

Mitigation
Reports
Show 10 entries
Search:
Description
Reported By
Category
Location
Type
Date
Sargassum for so
Jonah Charles
unspecified
12.12,-61.62
image/*
2018-02-12 22:26:43
Showing 1 to 1 of 1 entries
Previous
Next
Opening Local Ecological Knowledge.xlsx
You have chosen to open:
Local Ecological Knowledge.xlsx
which is: Microsoft Excel Worksheet (15.2 kB)
from: blob:
What should Firefox do with this file?
Open with
Microsoft Excel (default)
Save File
Do this automatically for files like this from now on.
OK
Cancel
Local Ecological Knowledge.xlsx [Read-Only] - Microsoft Excel
File
Home
Insert
Page Layout
Formulas
Data
Review
View
Add-Ins
Team
A1
Description
Fisheries Officer - Export data to analyze posts by fishers in LEK

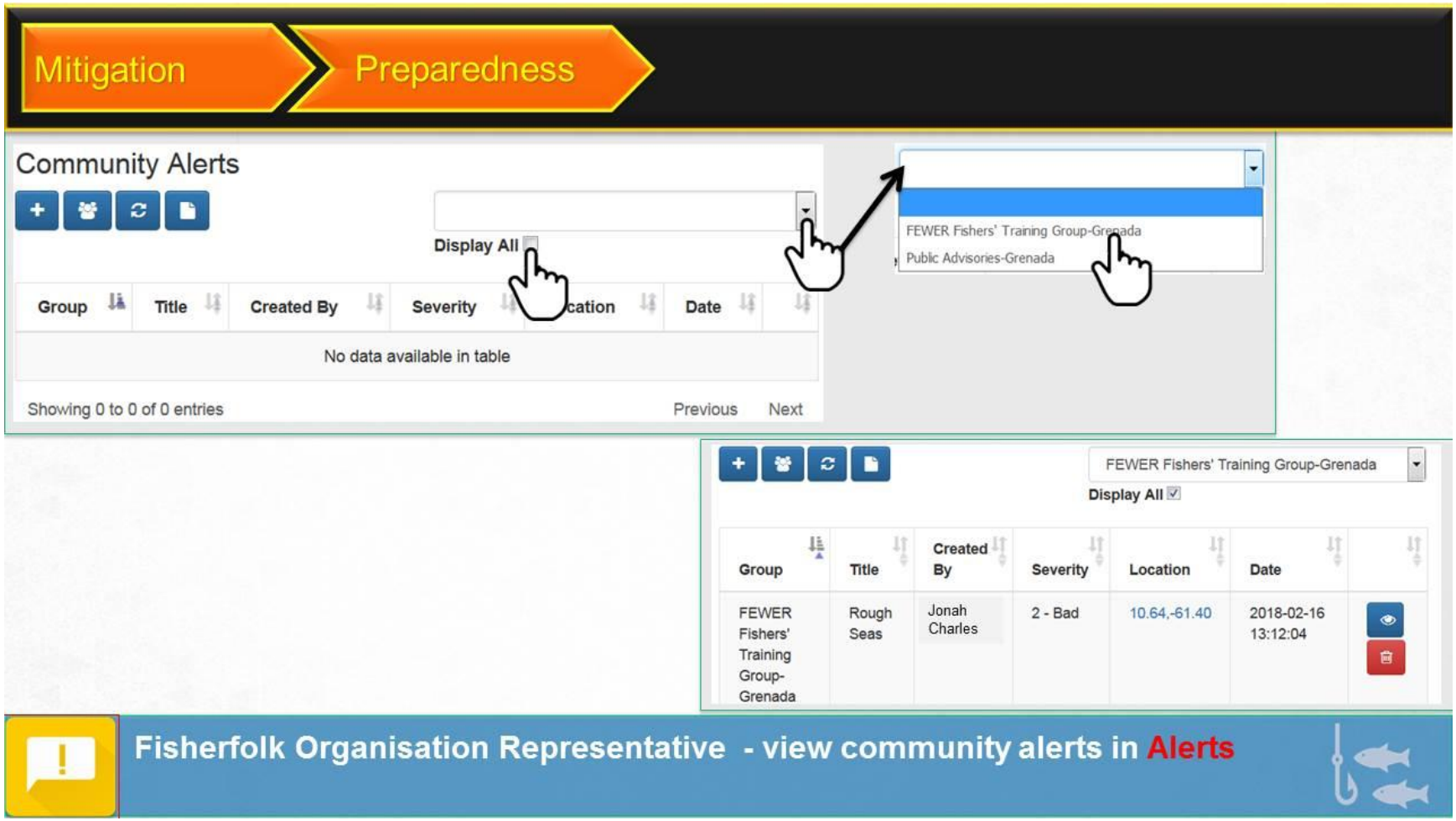

Mitigation
Preparedness
Show 10 entries
Search:
Source
Country
Info Type
Source Type
Interval
Duration
Last Reading
Date Created
Operations
Grenada - MET Office
Grenada
Weather
Website
Every 6 Hours
Single Day
2018-02-14 03:12:37
2017-08-22 20:57:24
World Tide - Grenada
Grenada
Oceanic
API
Once a day
Single Day
2018-01-26 17:23:56
2017-08-23 06:30:34
Showing 1 to 2 of 2 entries
Next
Configure Thresholds
Wind speed
Warning Threshold
Wind speed Warning Value
mph
Emergency Threshold
Wind speed Emergency Value
mph
Waves
Warning Threshold
Waves Warning Value
feet
Emergency Threshold
Waves Emergency Value
feet
Save
Marcus, Meteorological Officer
Met. Officer - Update weather threshold conditions in Weather

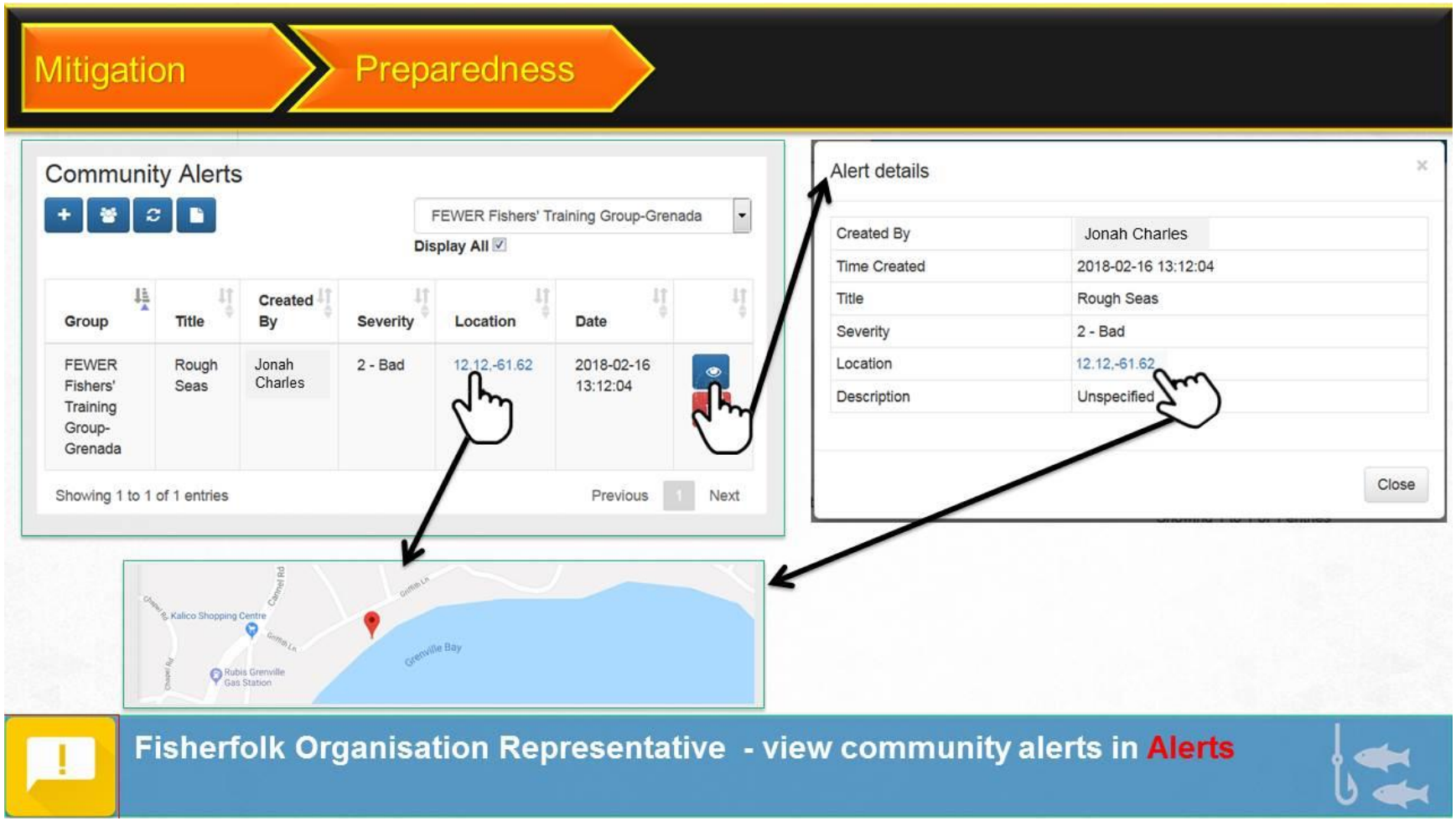

Mitigation
Preparedness
CAP Alerts
Early Warning Sources
Show 10 entries
Search:
Name
URL
Format
Scope
Operations
Grenada CAP
https://grd-secondary.capews.com/capews/public/atom?type=cap
ATOM
national
Grenada FEWER CAP
https://capgd.mfisheries.cirp.org.tt/feed.json
JSON
mFisheries
Showing 1 to 2 of 2 entries
Previous
1
Next
Add Source
Name*
Grenada CAP
Format*
ATOM Feed
Scope*
National
URL*
https://grd-secondary.capews.com/capews/public/atom?
Close
Updating Alert Source
Alert Source Updating
OK
Disaster Management Agent - edit national CAP alert source in Alerts

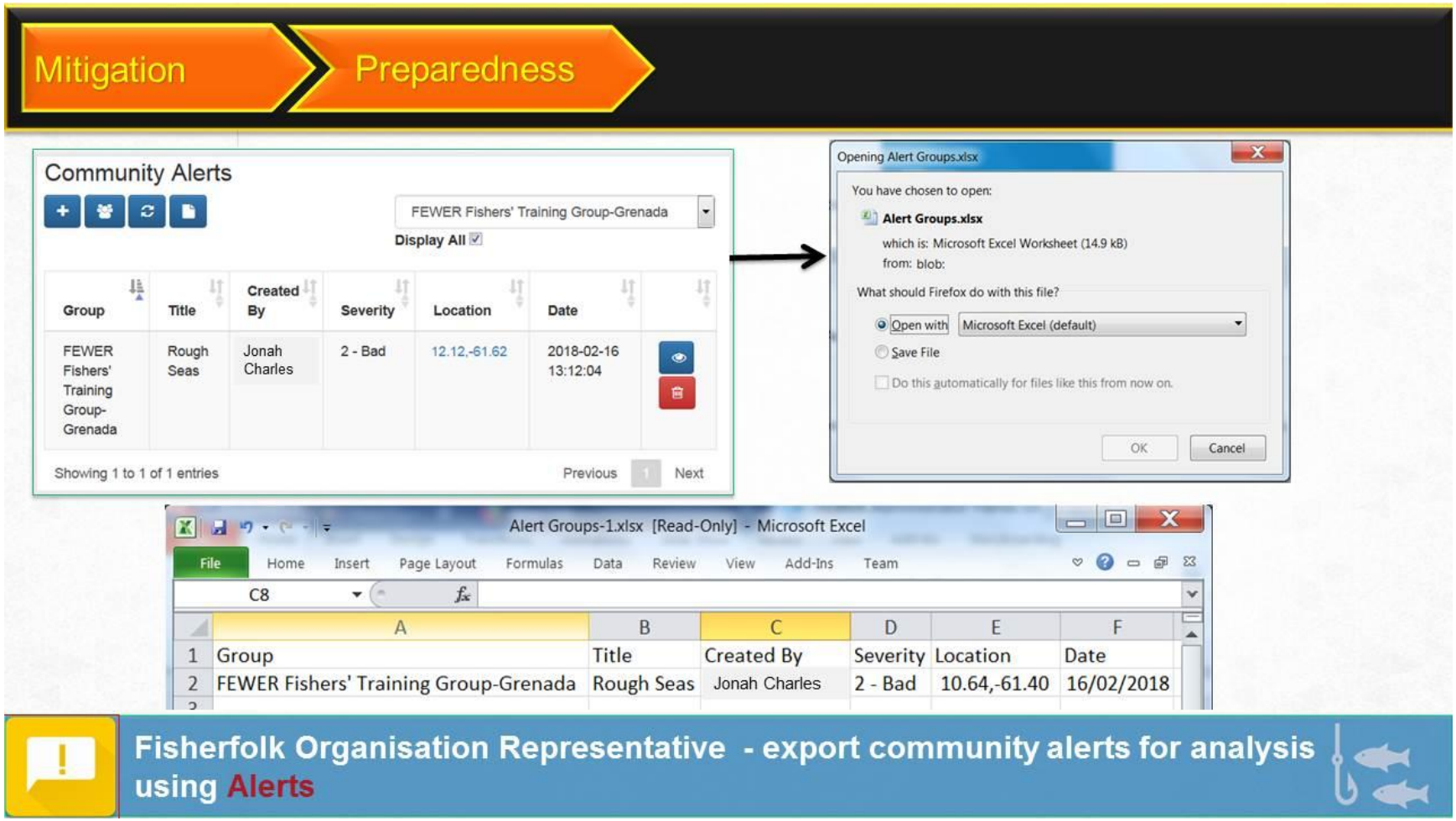

Mitigation
Preparedness
CAP Alerts
Message Template (Optional): FEWER Storm Surge Alert
Status: * Actual
Type: * Alert
Scope: * Public
Hazard Type: * Meteorological
Protective Action: * Recommended Action
Message Priority: * Immediate
Moderate
Observed Event
Time to Expiration: * 6 Hours
Alert Details
Event* FEWER storm surge alert for [AREA]
Short-Text Headline: FEWER storm surge alert for [AREA]
(106 characters left)
Describe the Event or Hazard: A FEWER storm surge alert is in effect for [AREA]. A storm surge alert means that sea level is expected to rise above normal levels due to storm conditions, and
What Should Affected People Do: Precautions should be taken to safeguard property. Persons and property in and near to areas prone to flooding especially where high tide may normally reach
Who is the Contact: A description of the contact including a Telephone and/or email for further information
Alternate alert website: none
Sender Name:*
Add a Parameter
Disaster Management Agent - create Storm Surge alert for FEWER in Alerts


Mitigation
Preparedness
Alert Area
Select Area Template (Optional)
Describe the Alert Area
Unspecified Area
Map
Clifton
Hillsborough
Grenada
Grenville
St. George's
© OpenStreetMap contributors
Drag
Circle
Shape
Clear Last
Clear All
Geocodes
Add a Geocode
Coordinates
Add a Coordinate
Review & Release
Review Message Content:
<alert xmlns="urn:oasis:names:tc:emergency:cap:1.2">
<identifier>pending</identifier>
<sender></sender>
<sent></sent>
<status>Actual</status>
<msgType>Alert</msgType>
<scope>Public</scope>
<info>
<language></language>
<category>Met</category>
<event>FEWER storm surge alert for [AREA]</event>
<responseType>Prepare</responseType>
<urgency>Immediate</urgency>
<severity>Moderate</severity>
<certainty>Observed</certainty>
<headline>FEWER storm surge alert for [AREA]</headline>
Authorize Release:
User ID
Password
* Ensure all required fields of the alert was correctly configured.
Cancel
Release Alert
Disaster Management Agent - create Storm Surge alert for FEWER in Alerts


Mitigation
Preparedness
Current Alerts
Listing of current CAP Alerts
No Current Alerts
Title
Action
Sent
For
No data available in table
Showing 0 to 0 of 0 entries
Previous
Next
Disaster Management Agent - new Storm Surge alert for FEWER in Alerts

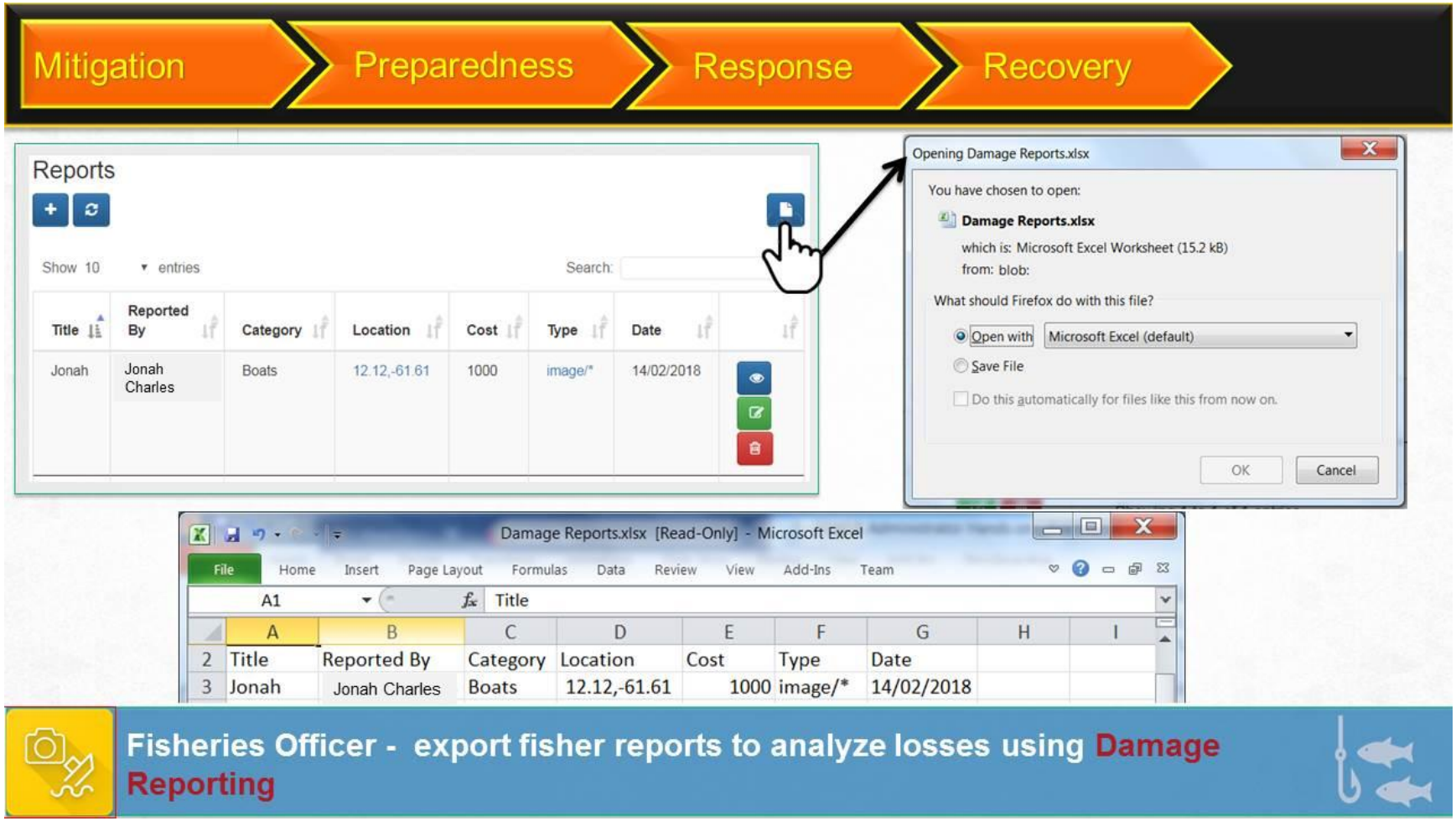

Mitigation
Preparedness
Community Alerts
Display All
Group
Title
Created By
Severity
Date
No data available in table
Showing 0 to 0 of 0 entries
Previous
Next
FEWER Fishers' Training Group-Grenada
Public Advisories-Grenada
FEWER Fishers' Training Group-Grenada
Display All
Group
Title
Created By
Severity
Location
Date
FEWER Fishers' Training Group-Grenada
Rough Seas
Jonah Charles
2 - Bad
10.64,-61.40
2018-02-16 13:12:04
Fisherfolk Organisation Representative - view community alerts in Alerts

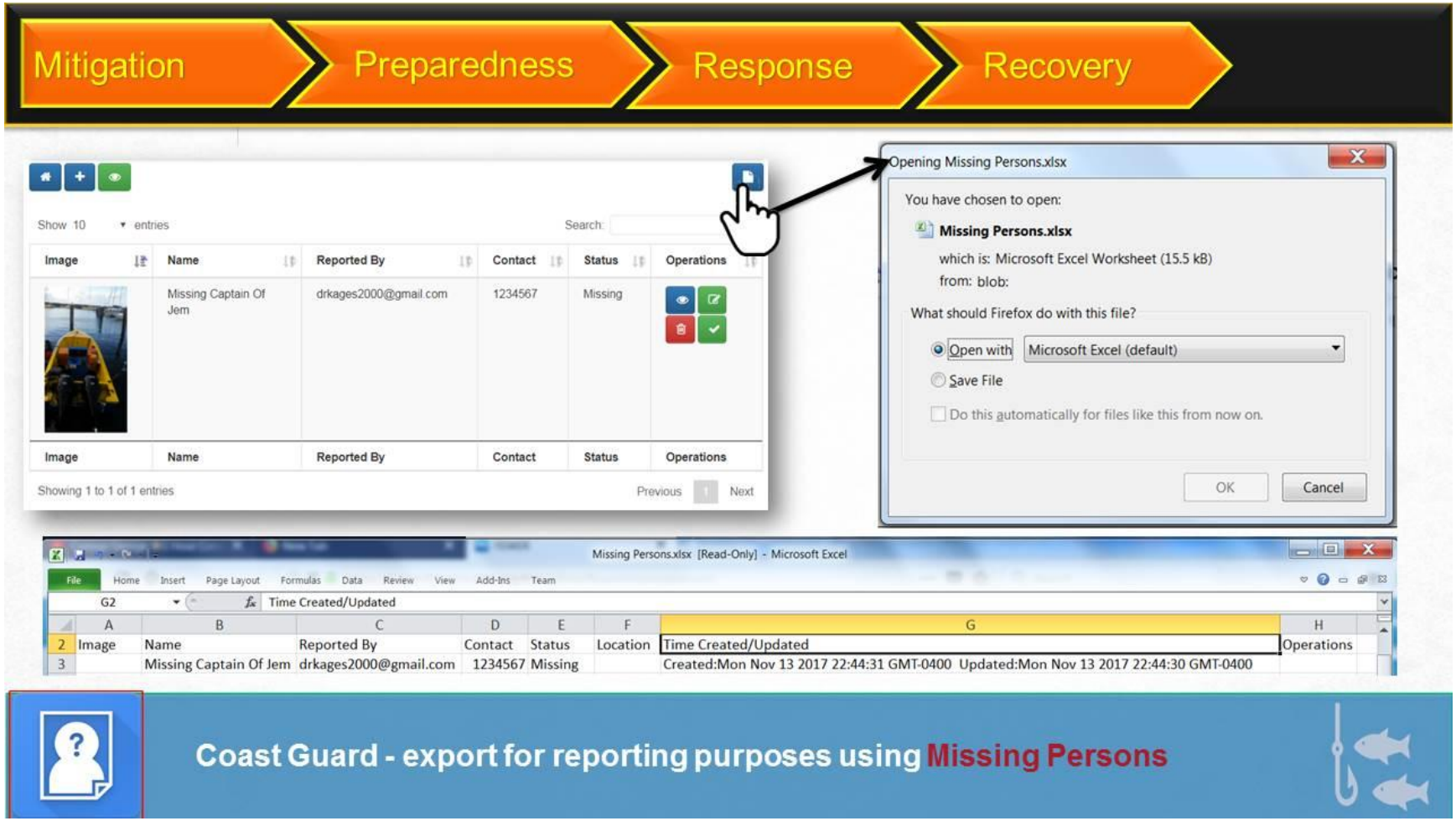

Mitigation
Preparedness
Community Alerts
FEWER Fishers' Training Group-Grenada
Display All
Group
Title
Created By
Severity
Location
Date
FEWER Fishers' Training Group-Grenada
Rough Seas
Jonah Charles
2 - Bad
12.12,-61.62
2018-02-16 13:12:04
Showing 1 to 1 of 1 entries
Previous
1
Next
Alert details
Created By
Jonah Charles
Time Created
2018-02-16 13:12:04
Title
Rough Seas
Severity
2 - Bad
Location
12.12,-61.62
Description
Unspecified
Close
Kalico Shopping Centre
Grenville Bay
Rubis Grenville Gas Station
Fisherfolk Organisation Representative - view community alerts in Alerts

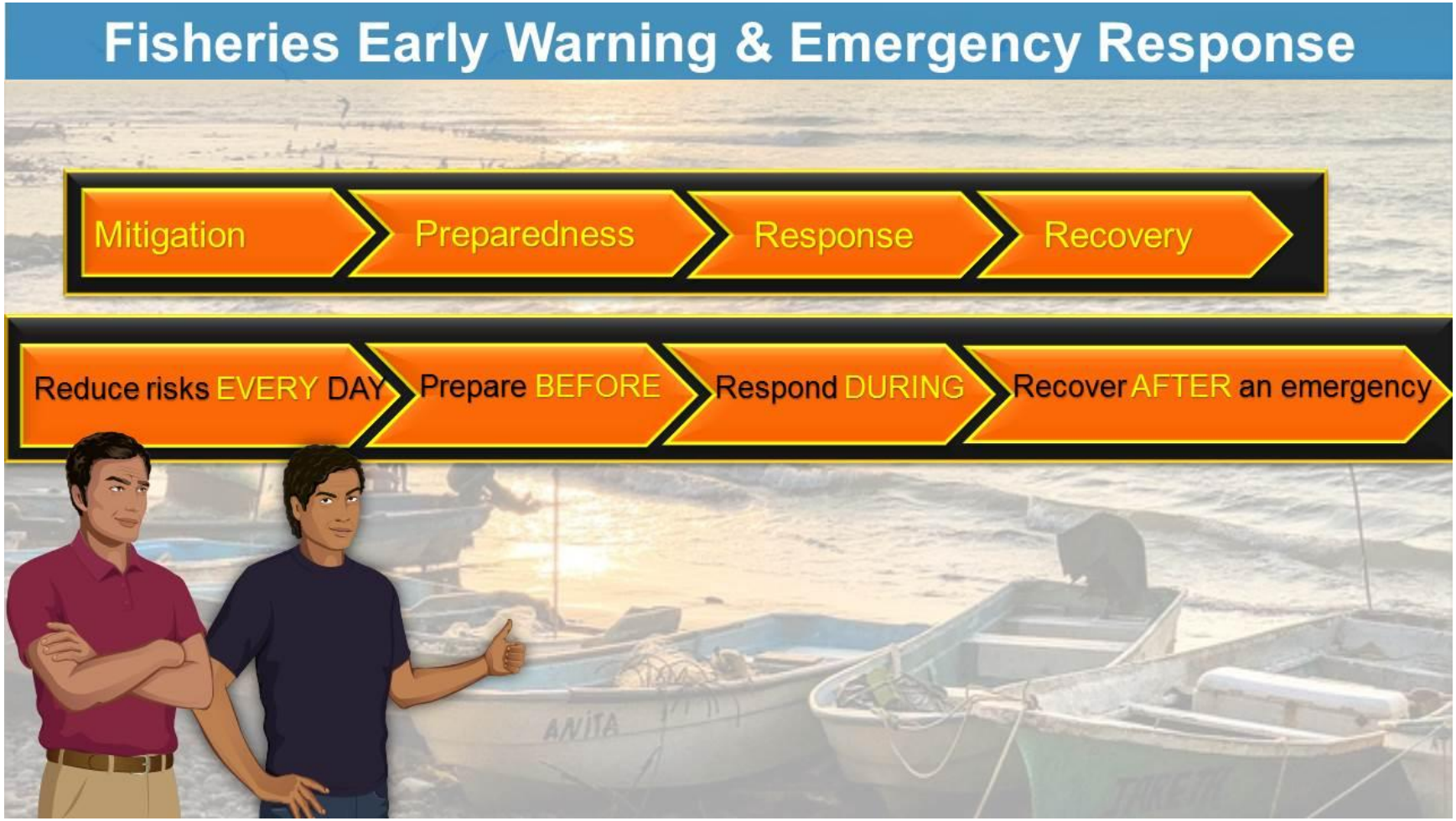

Mitigation
Preparedness
Community Alerts
FEWER Fishers' Training Group-Grenada
Display All
Group
Title
Created By
Severity
Location
Date
FEWER Fishers' Training Group-Grenada
Rough Seas
Jonah Charles
2 - Bad
12.12,-61.62
2018-02-16 13:12:04
Showing 1 to 1 of 1 entries
Previous
1
Next
Opening Alert Groups.xlsx
You have chosen to open:
Alert Groups.xlsx
which is: Microsoft Excel Worksheet (14.9 kB)
from: blob:
What should Firefox do with this file?
Open with
Microsoft Excel (default)
Save File
Do this automatically for files like this from now on.
OK
Cancel
Alert Groups-1.xlsx [Read-Only] - Microsoft Excel
File
Home
Insert
Page Layout
Formulas
Data
Review
View
Add-Ins
Team
C8
A
B
C
D
E
F
1
Group
Title
Created By
Severity
Location
Date
2
FEWER Fishers' Training Group-Grenada
Rough Seas
Jonah Charles
2 - Bad
10.64,-61.40
16/02/2018
Fisherfolk Organisation Representative - export community alerts for analysis using Alerts


Mitigation
Preparedness
Response
Add New Emergency Contact
Name*
Emergency Contact Name
Contact #*
Emergency Contact Number
Email
Emergency Contact Email Address
Type*
Organization
Related Emergency
Unspecified
+ Add Field
Save
+ Add Field
Additional Fields
Key
Key
Value
Value
Save
Brenda, Disaster Management
The Disaster Management Agent – adds new contact info in Emergency Contacts


Mitigation
Preparedness
Response
Show 10 entries
Search:
Profile
Name
Contact #
Email
Type
Additional
Operations
Grenada Ambulance Service
434
Organization
NO
Grenada Coast Guard
399
Organization
YES
Opening Emergency Contacts.xlsx
You have chosen to open:
Emergency Contacts.xlsx
which is: Microsoft Excel Worksheet (16.8 kB)
from: blob:
What should Firefox do with this file?
Open with
Microsoft Excel (default)
Save File
Do this automatically for files like this from now on.
OK
Cancel
Brenda, Disaster Management
Emergency Contacts.xlsx [Read-Only] - Microsoft Excel
Profile
Name
Contact #
Email
Type
Grenada Ambulance Service 434 Organization
Grenada Coast Guard 399 Organization
Grenada Department of Marine Resources 4734403814 Organization
Grenada Fire Department 911 Organization
Grenada Police Service 911 Organization
Grenada Red Cross Society 4734401483 grercs@spiceisle.com Organization
National Disaster Management Agency 4734400838 nadma@spiceisle.com Organization
The Disaster Management Agent – generates list of all Emergency Contacts


Mitigation
Preparedness
Response
Recovery
Reports
Show 10 entries
Search:
Title
Reported By
Category
Location
Cost
Type
Date
Jonah
Jonah Charles
Boats
12.12,-61.61
1000
image/*
14/02/2018
Opening Damage Reports.xlsx
You have chosen to open:
Damage Reports.xlsx
which is: Microsoft Excel Worksheet (15.2 kB)
from: blob:
What should Firefox do with this file?
Open with
Microsoft Excel (default)
Save File
Do this automatically for files like this from now on.
OK
Cancel
Damage Reports.xlsx [Read-Only] - Microsoft Excel
File
Home
Insert
Page Layout
Formulas
Data
Review
View
Add-Ins
Team
A1
Title
Fisheries Officer - export fisher reports to analyze losses using Damage Reporting


Mitigation
Preparedness
Response
Recovery
Show 10 entries
Search:
Image
Name
Reported By
Contact
Status
Operations
Missing Captain Of Jem
drkages2000@gmail.com
1234567
Missing
Showing 1 to 1 of 1 entries
Previous
Next
Opening Missing Persons.xlsx
You have chosen to open:
Missing Persons.xlsx
which is: Microsoft Excel Worksheet (15.5 kB)
from: blob:
What should Firefox do with this file?
Open with
Microsoft Excel (default)
Save File
Do this automatically for files like this from now on.
OK
Cancel
Missing Persons.xlsx [Read-Only] - Microsoft Excel
File
Home
Insert
Page Layout
Formulas
Data
Review
View
Add-Ins
Team
G2
Time Created/Updated
Location
Created:Mon Nov 13 2017 22:44:31 GMT-0400 Updated:Mon Nov 13 2017 22:44:30 GMT-0400
Coast Guard - export for reporting purposes using Missing Persons


Fisheries Early Warning & Emergency Response
Mitigation
Preparedness
Response
Recovery
Reduce risks EVERY DAY
Prepare BEFORE
Respond DURING
Recover AFTER an emergency

Keeping in Touch

Get help and keep in touch on the **FEWER Admins GND Whatsapp** group:
https://tinyurl.com/FEWERadminsGND.

Refer to FEWER Manual:
https://tinyurl.com/FEWERAdminHelp

FEWER Admin Manual

FEWER Admins on WhatsApp

Appendix B.5. Evaluation: Regional, Country and Agency Administrators

Tick your organisation's FEWER role

FEWER role	Agency Admin: Met Office ☐ Disaster Management Agency ☐ Fisherfolk Organization ☐
	Country Admin ☐ Coast Guard ☐ Technical Admin ☐ Regional Admin ☐ Other ☐

Remember the Country Admin is the Fisheries Authority

Tick as appropriate

You found that:	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1. The objectives of the workshop were clear					
2. The content and detail were appropriate					
3. Scenarios were relevant to your role in FEWER					
4. The hands-on activities helped consolidate understanding of FEWER and its operations					
5. The trainers were effective					
6. The venue was suitable					
7. Break and lunch catering were adequate					

Select YES or NO

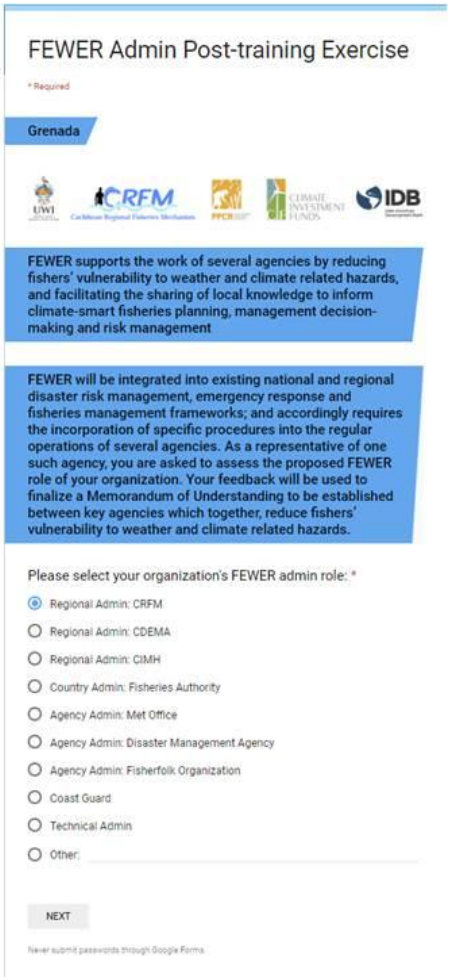
FEWER is intended to:		Yes	No
1.	meet all fishers' EW & ER needs associated with weather and climate		
2.	reduce fishers' risks from weather- and climate-related hazards		
3.	operate within the national Disaster Risk Management framework		
4.	provide all capabilities on all mobile devices that fishers use at land and sea		

Tick as appropriate

Which FEWER modules would be used to:							
1. upload a video on safety at sea for FEWER fishers							
2. broadcast to fishers that a threatening weather system has unexpectedly developed in the north							
3. update the phone number for the Coast Guard							
4. view marine artefacts recorded by fishers in 2018							
5. analyze the average cost of losses reported by fishers on account of last year's hurricanes							
6. alter the wave height threshold for FEWER to automatically indicate the need for fishers' caution							
7. prepare a report for the Minister on missing fishers rescued with the assistance of FEWER							

FEWER Admin Post-Training Exercises

Please complete within one week of training:
https://tinyurl.com/FEWERMoUGND



Keeping in Touch

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Refer to FEWER Manual: https://tinyurl.com/FEWERAdminHelp

FEWER Admin Manual

FEWER Admins on WhatsApp

Thank You!


UWI


CRFM
Caribbean Regional Fisheries Mechanism


PPCR


CIF
CLIMATE
INVESTMENT
FUNDS


IDB
Inter-American
Development Bank

Appendix B.6. Hands-on FEWER Administrative Tasks: Coast Guard & Technical Administrators

Coast Guard (CG) was shown their interface with each representative directly interacting with the web dashboards for the following modules:

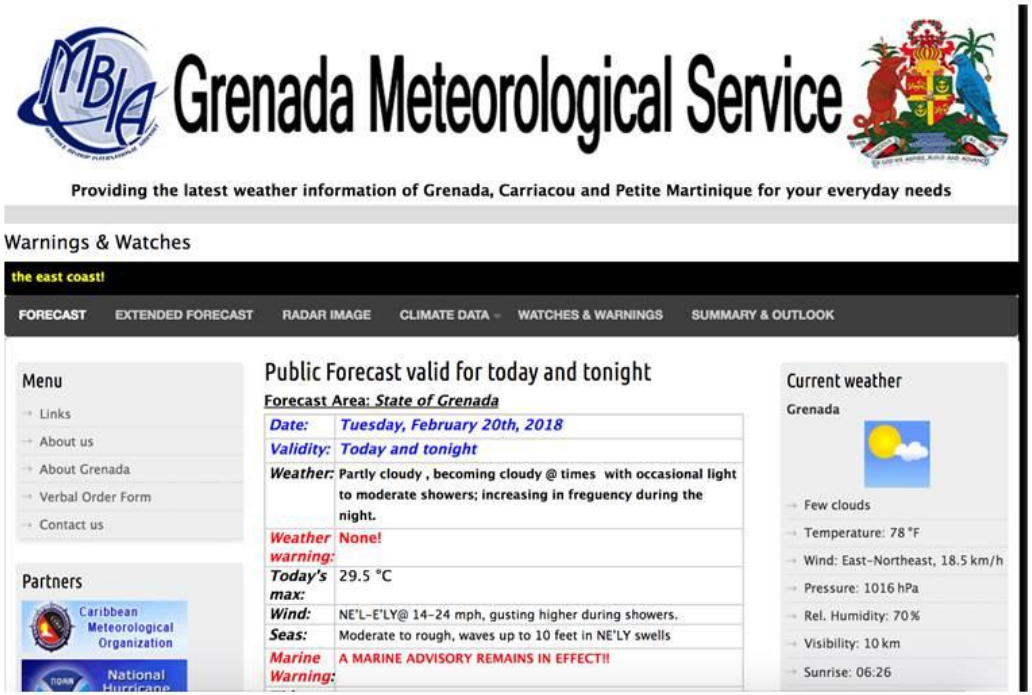
1. Tracks
2. Alerts
3. Missing Persons
4. Weather

Appendix B.7. Hands-on FEWER Administrative Tasks: Technical Administrators

Extractor Update

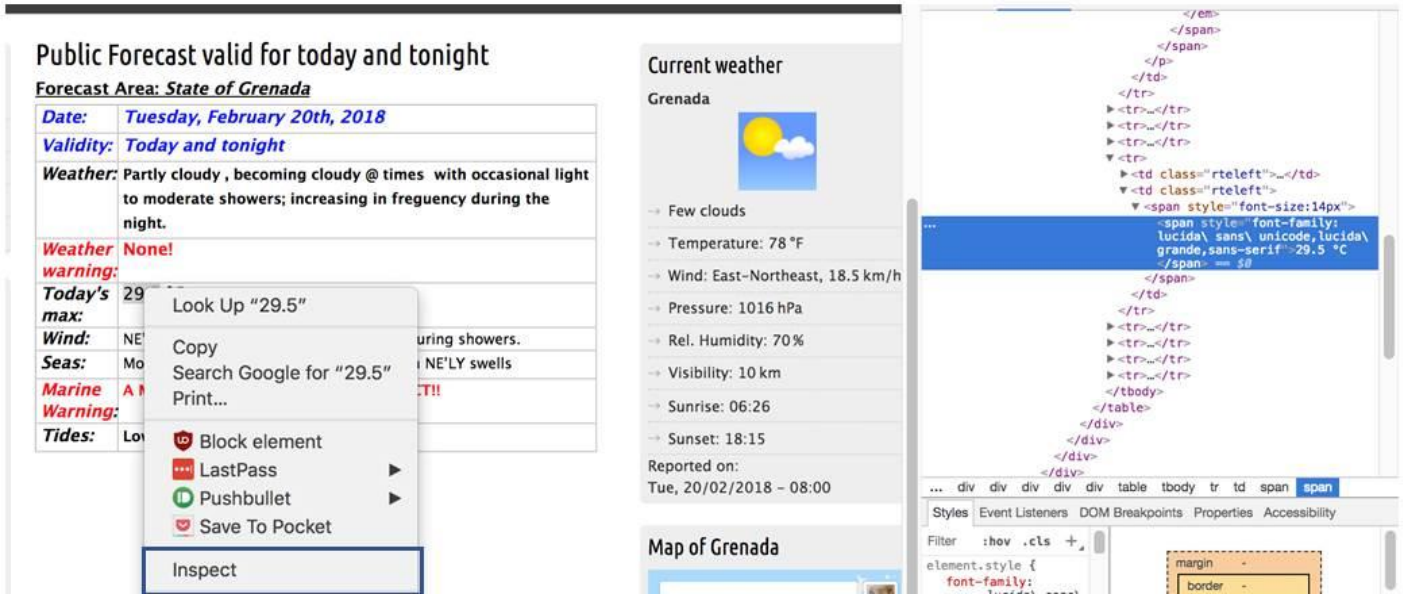
Understand what is required

- MET Office Website
- Extract via code values from the website
- Susceptible to breakage if website format change
- Update requires programming using the Python language



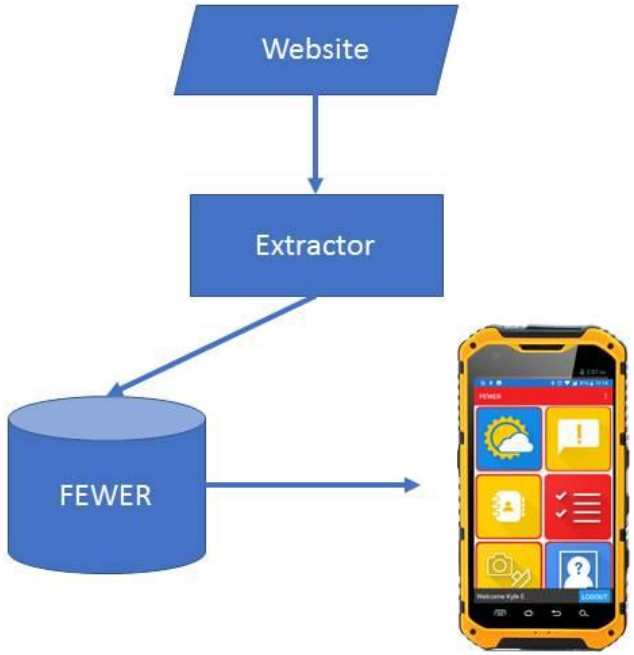
Understand Format of Website

- The format of the website helps to determine how to extract useful knowledge and information from the site.

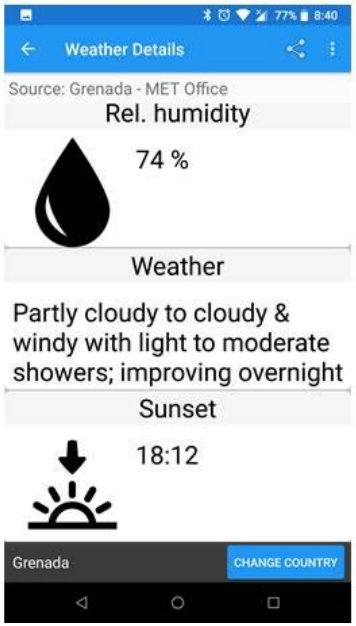


Extractors

- Extractors retrieve data from source
- Stores to the database which is used by the FEWER devices to provide weather information to fishers



Extractor Displays Warnings



Locate Extractors

- Met Office Extractors already created:
  - https://bitbucket.org/CIRP/weatherextractors/
- However there may be a need for modification

Understand Extractors

- Built with Python
- Uses request and BeautifulSoup to retrieve data from website and parse the page to extract information

Exercise

- We want to extract the specific wind speed value from the general descriptive text.
- Using the Provided extractor
  - Steps:
    - Record The values of the thresholds (as they would be overridden when update is uploaded)
    - Modify extractor by reviewing information needed and completing the extract method of the provided class
    - Edit the existing weather source
    - Upload the extractor
    - Update the threshold values within information recorded before the update
    - Save record
    - Test Extractor

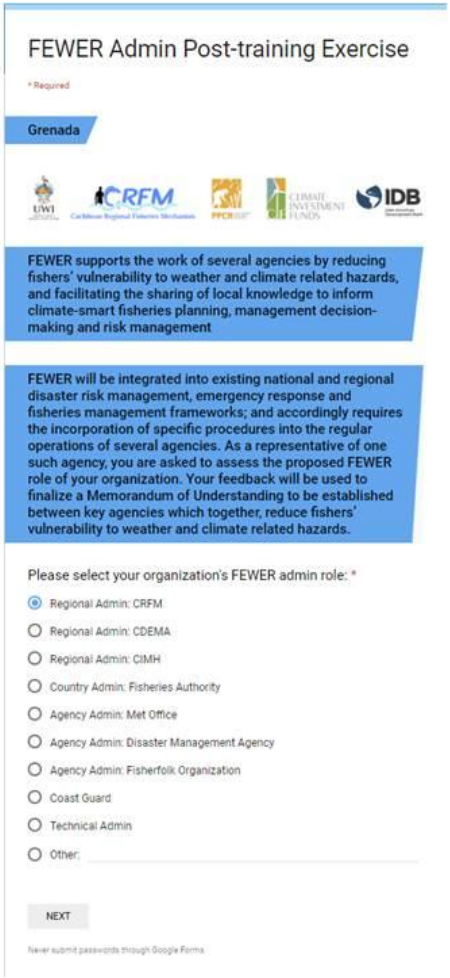
Support Docs

- Further documentation on the design and specification of extractors can be found at: http://bit.ly/FEWERExtractorDocs

Appendix B.8. Hands-on evaluation: Technical Administrators

FEWER Admin Post-Training Exercises

Please complete within one week of training:
https://tinyurl.com/FEWERMoUGND



Keeping in Touch

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Refer to FEWER Manual: https://tinyurl.com/FEWERAdminHelp

FEWER Admin Manual

FEWER Admins on WhatsApp

Thank You!


UWI


CRFM
Caribbean Regional Fisheries Mechanism


PPCR


CIF
CLIMATE
INVESTMENT
FUNDS


IDB
Inter-American
Development Bank

Appendix B.9. Welcome and Introduction to FEWER Fishers' Training Workshop

Welcome to FEWER Fishers Training!

Kevon

Amanda

Kyle

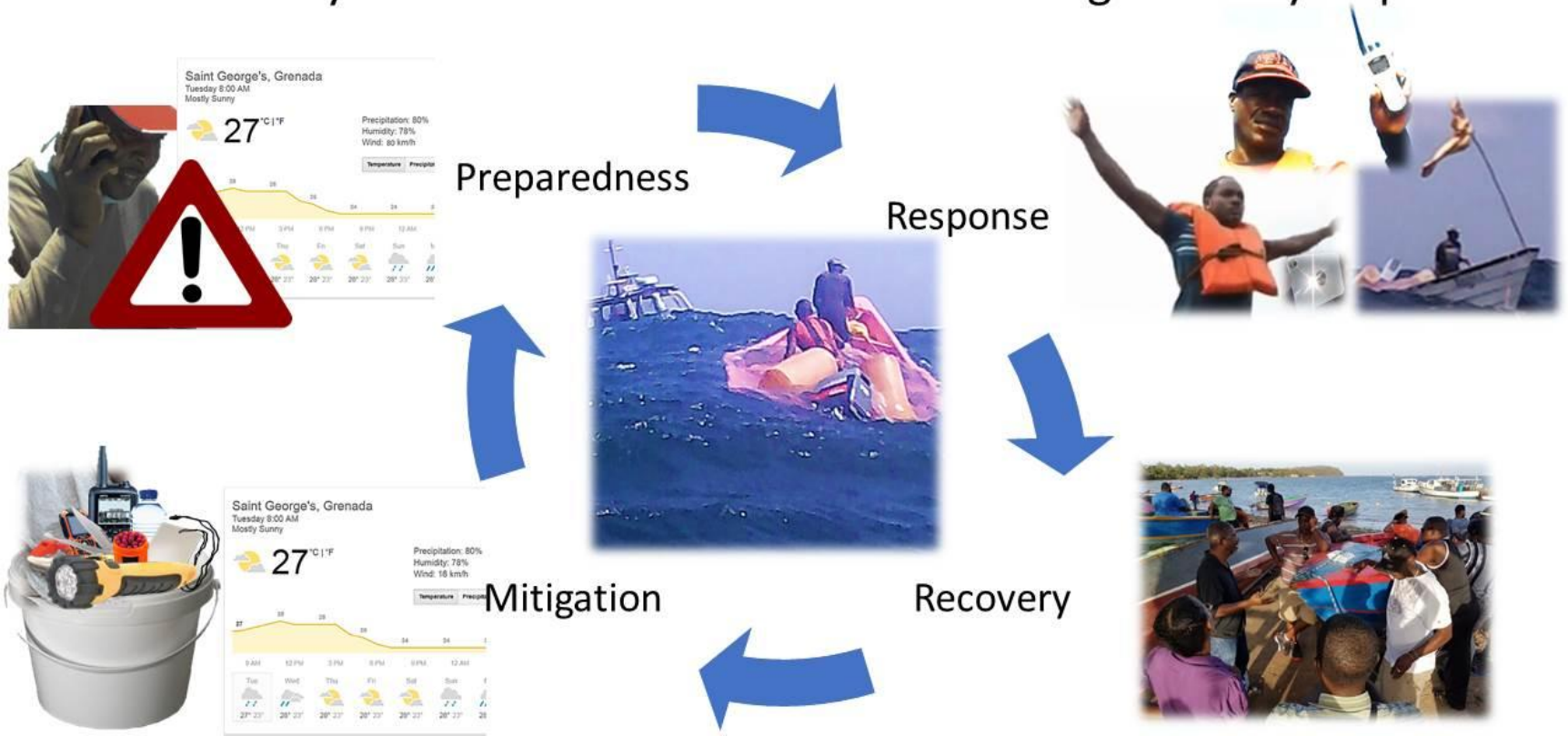
ICT4Fisheries Consortium

Agenda

8:30 am	Welcome
8:45 am	Introduction to FEWER
9:15 am	FEWER walk-through
9:45 am	Hands-on activity with web-based dashboard & resources
10:15 am	**Snack Break**
10:30 am	Hands-on FEWER admin tasks: all
12:30pm	Evaluation: regional, country & agency admins
12:45 pm	**Lunch Break**
1:30 pm	Hands-on FEWER admin tasks: coast guard & tech admins
2:30 pm	Discussion
3:00 pm	**Drinks Break**
3:15 pm	Hands-on FEWER admin tasks: tech admins
4:15 pm	Hands-on evaluation: tech admins
4:30 pm	**End of workshop**

Fishing is world's most dangerous job, Forbes (2017)

Fishers already reduce their risks in disaster management cycle phases:



Fisheries Early Warning (EW) & Emergency Response (ER)
FEWER

- Further reduces fishers' vulnerability to weather and climate related hazards

- Facilitates sharing of local knowledge to inform climate-smart fisheries planning, management decision-making & risk management
- To be integrated into existing national & regional disaster risk management and emergency response frameworks
- Supports the work of several agencies

FEWER

Local Ecological Knowledge (LEK)

Weather

Emergency Contacts

Damage Reporting

Messaging

Alerts

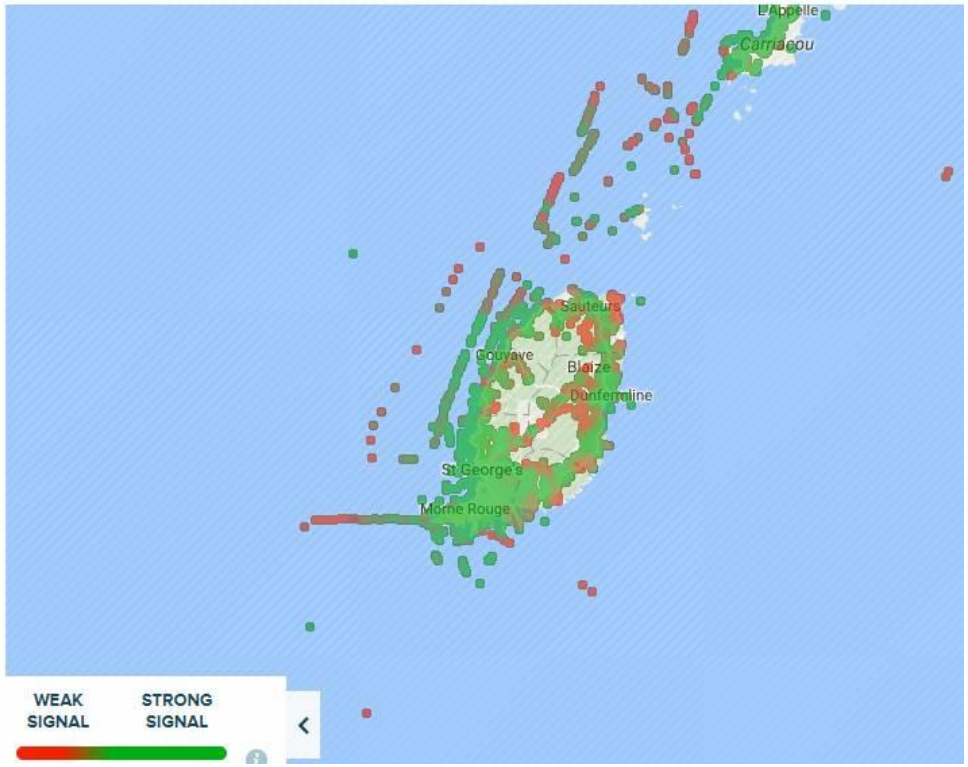
Emergency Procedures

Missing Persons

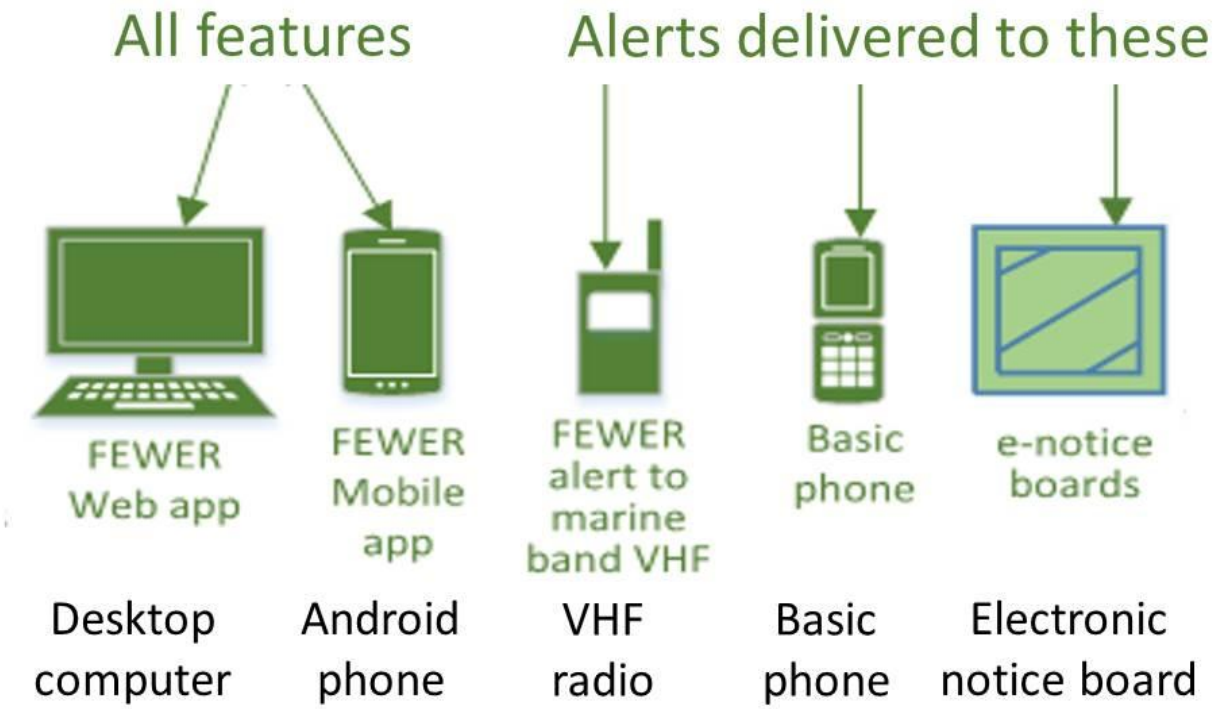
Mitigation		**LEK**	*Every day fishers record things to reduce their risk at sea*
		**Messaging**	*Every day fishes keep in touch with others for safety*
Preparedness		**Weather**	*Every day fishers check weather and if it's bad, share*
		**Alerts**	*When an emergency is coming fishers send alerts*
Response		**Emergency Contacts**	*In emergencies fishers use up-to-date emergency contacts*
		**Emergency Procedures**	*In emergencies fishers know what to do*
Recovery		**Damage Reporting**	*When fishers suffer loss or damage, they create a report*
		**Missing Persons**	*When a fisher goes missing, others broadcast to help recover*

Local Ecological Knowledge (LEK)	✓✓✓
Messaging	✓
Weather	✓✓
Alerts	✓
Emergency Contacts	✓✓
Emergency Procedures	✓✓✓
Damage Reporting	✓✓
Missing Persons	✓✓

FEWER provides info always;
needs cell service or WiFi to communicate
(send or receive)

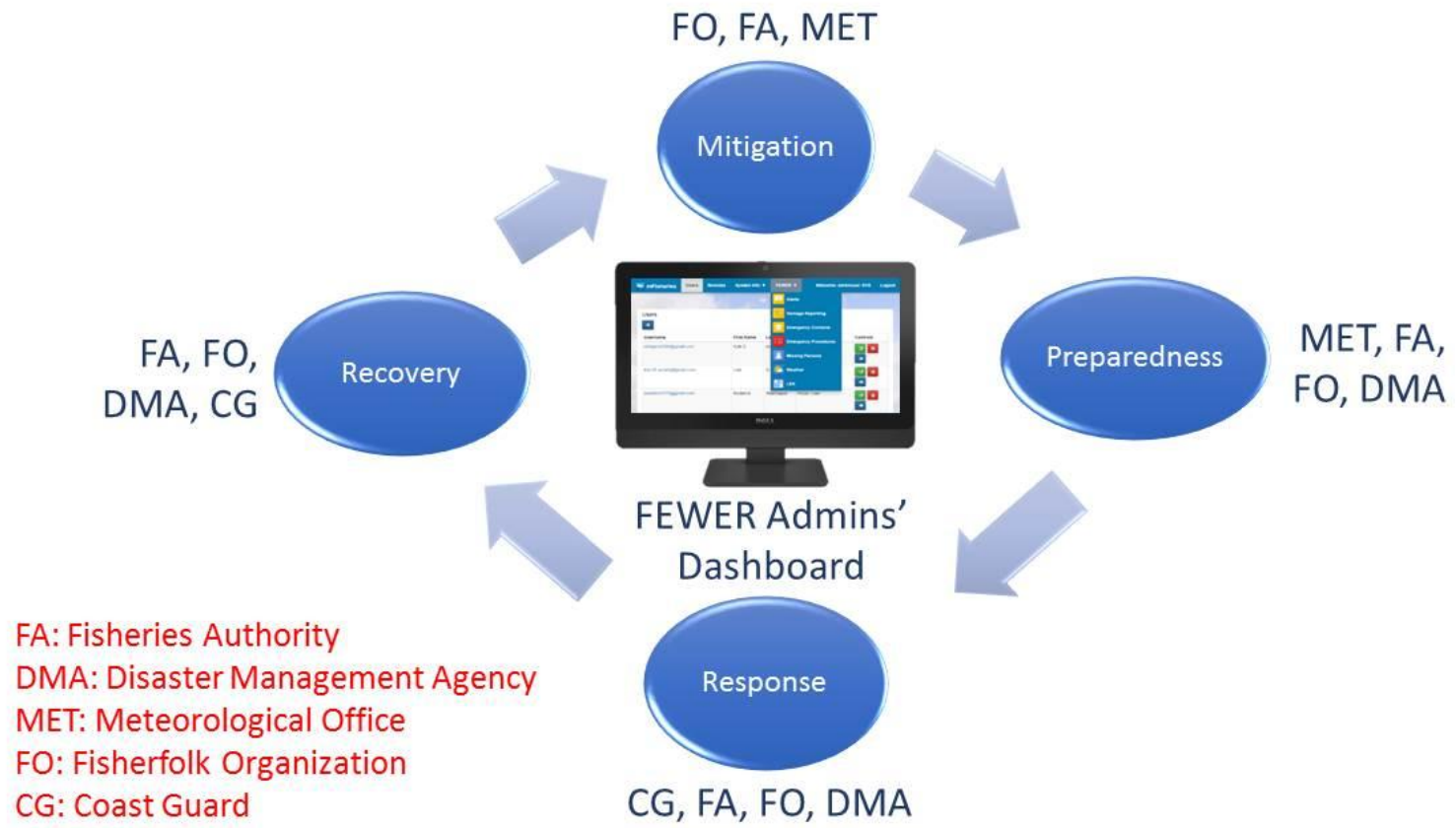


FEWER features depend on device



FEWER works with other tools to reduce risks

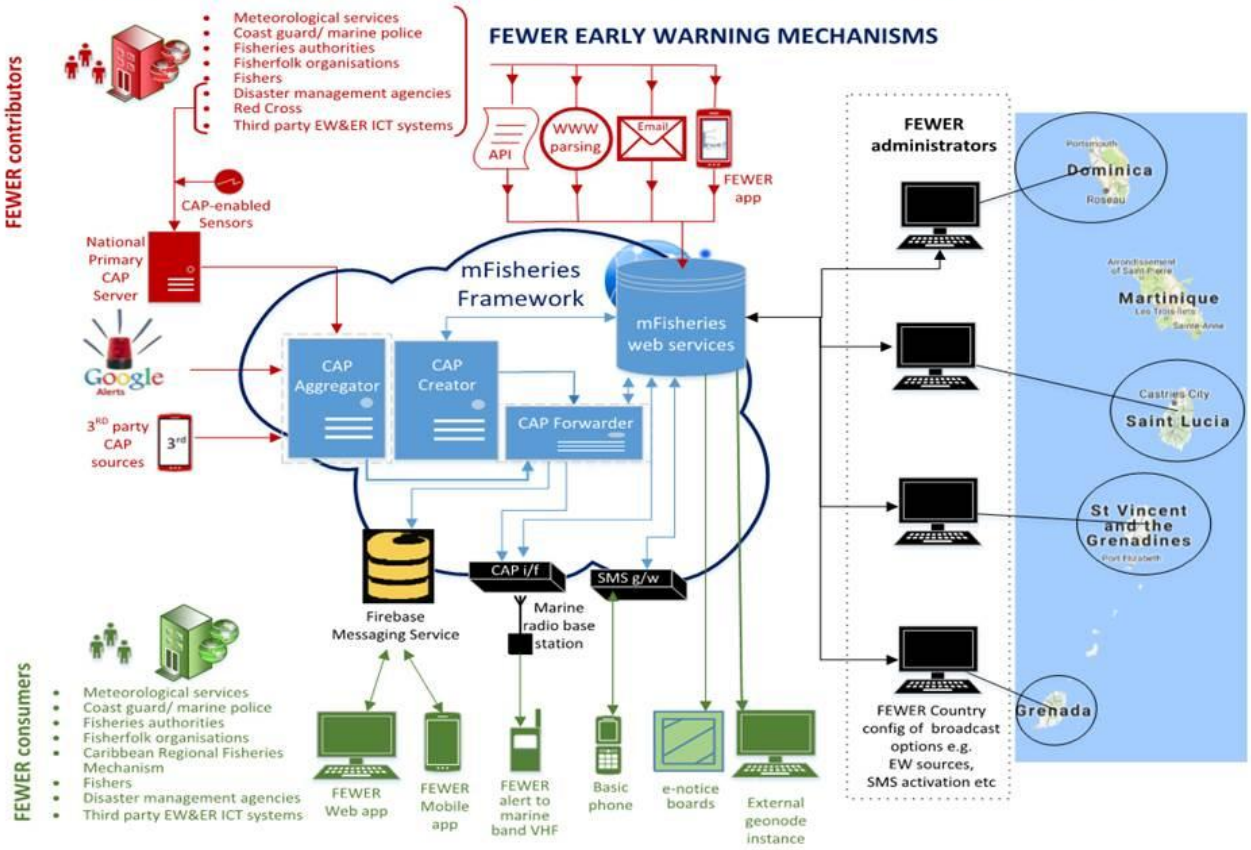
FEWER works within national & regional systems



FA: Fisheries Authority
DMA: Disaster Management Agency
MET: Meteorological Office
FO: Fisherfolk Organization
CG: Coast Guard

Eg Integration into National CAP System

CAP = Common Alerting Protocol



FEWER admin is at regional, country & agency levels

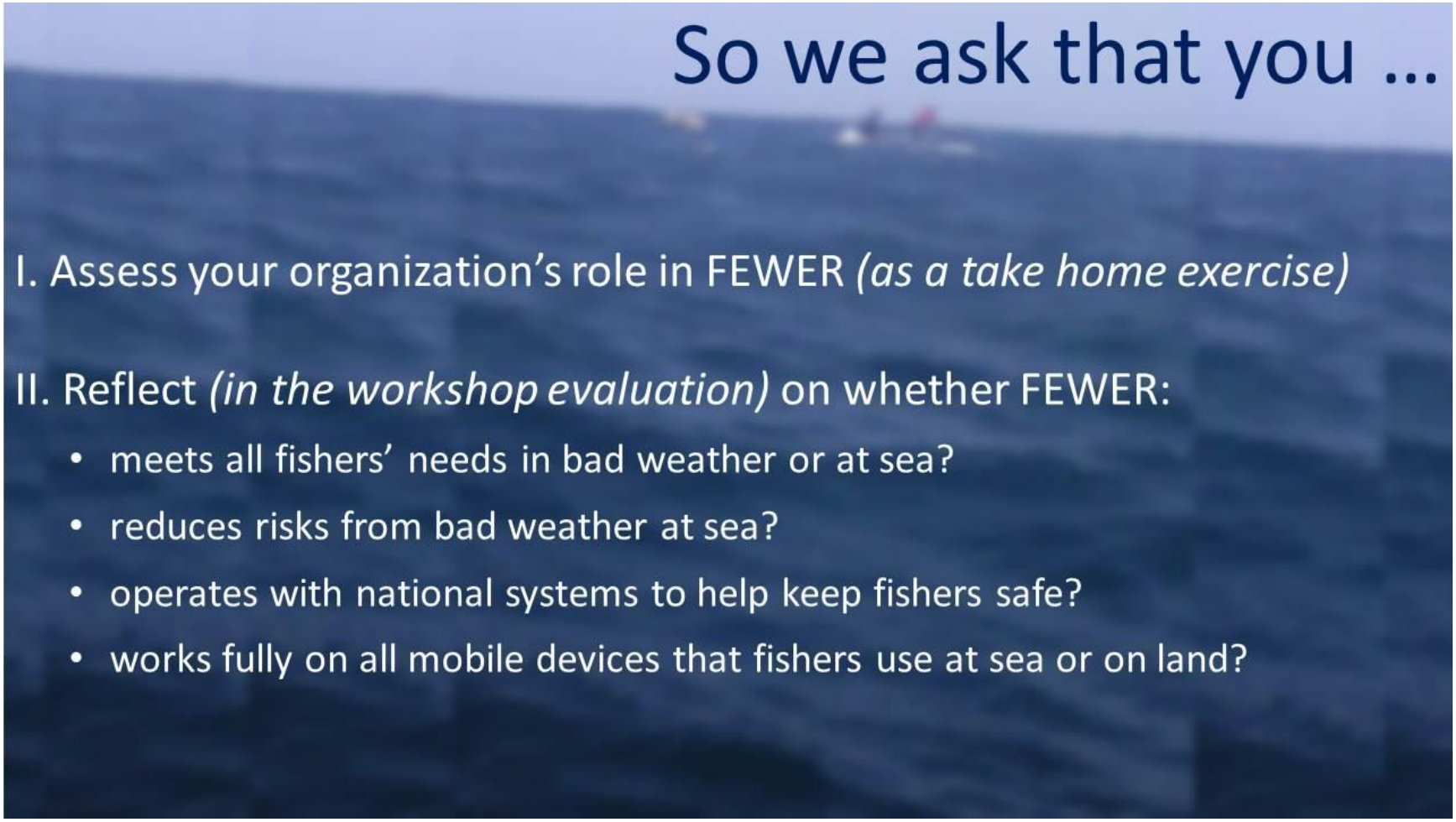
Key Admin focal points include but are not limited to:

Regional Admin	• Include fishers' EW & ER in regional policies and programmes for fisheries, hydromet & DRM • Ensure FEWER is maintained & included in regular operations; use its reports in policy and planning
Country Admin: Fisheries Authority	• Include fishers' EW & ER in national fisheries policies and programmes; and promote best practice • Manage national FEWER, include it in extension services, and use its reports in policy & planning
Agency Admin: DMA	• Integrate FEWER & its CAP templates into the national MHEWS, activating its channels as needed • Provide situational learning content as well as emergency preparation and response procedures
Agency Admin: MET	• Ensure FEWER weather thresholds & icons are correct & fit for purpose; recommend improvements • Promptly notify FEWER tech admin of changes to weather information on website
Agency Admin: Fisherfolk Organization	• Support FEWER training and promote the use of FEWER by fishers as normal practice • Establish organisational & community FEWER networks; encourage fishers to share local knowledge
Coast Guard	• Incorporate FEWER into regular search and rescue operations and training • Provide learning resources and training on matters relating to safety and communications at sea
Technical Admin	• Provide all technical support necessary to maintain FEWER & support other admins on technical matters

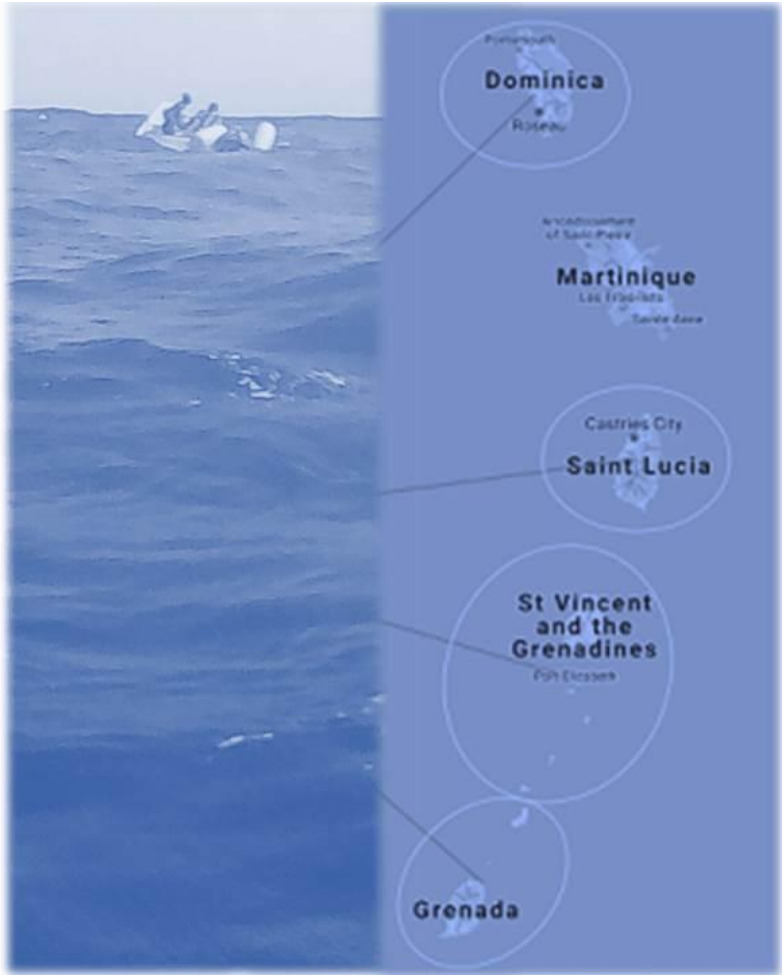
Strategy

- The overarching strategy is to build fishers' resilience

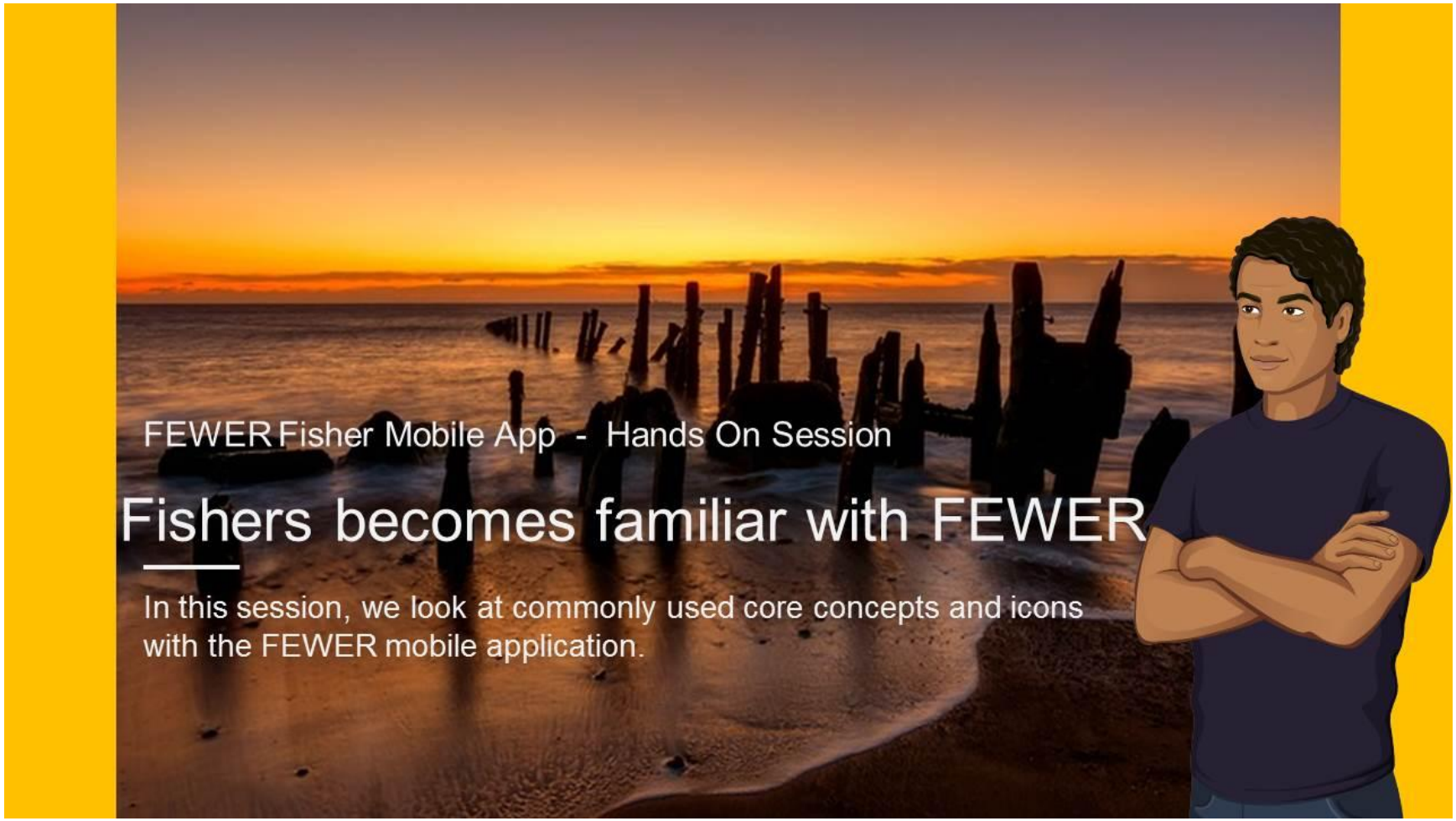
- Essential to incorporate fisher engagement and support into the planning & operations of key agencies: fisheries authorities, disaster management (DM) agencies, MET services and fisherfolk organizations as well as regional authorities on fisheries, DM and hydrometeorology in order to:
  - build fishers' understanding of risks and mechanisms for mitigation and response
  - develop relevant skills
  - provide context-appropriate reinforcement of these mechanisms


So we ask that you …
I. Assess your organization's role in FEWER (as a take home exercise)
II. Reflect (in the workshop evaluation) on whether FEWER:
• meets all fishers' needs in bad weather or at sea?
• reduces risks from bad weather at sea?
• operates with national systems to help keep fishers safe?
• works fully on all mobile devices that fishers use at sea or on land?

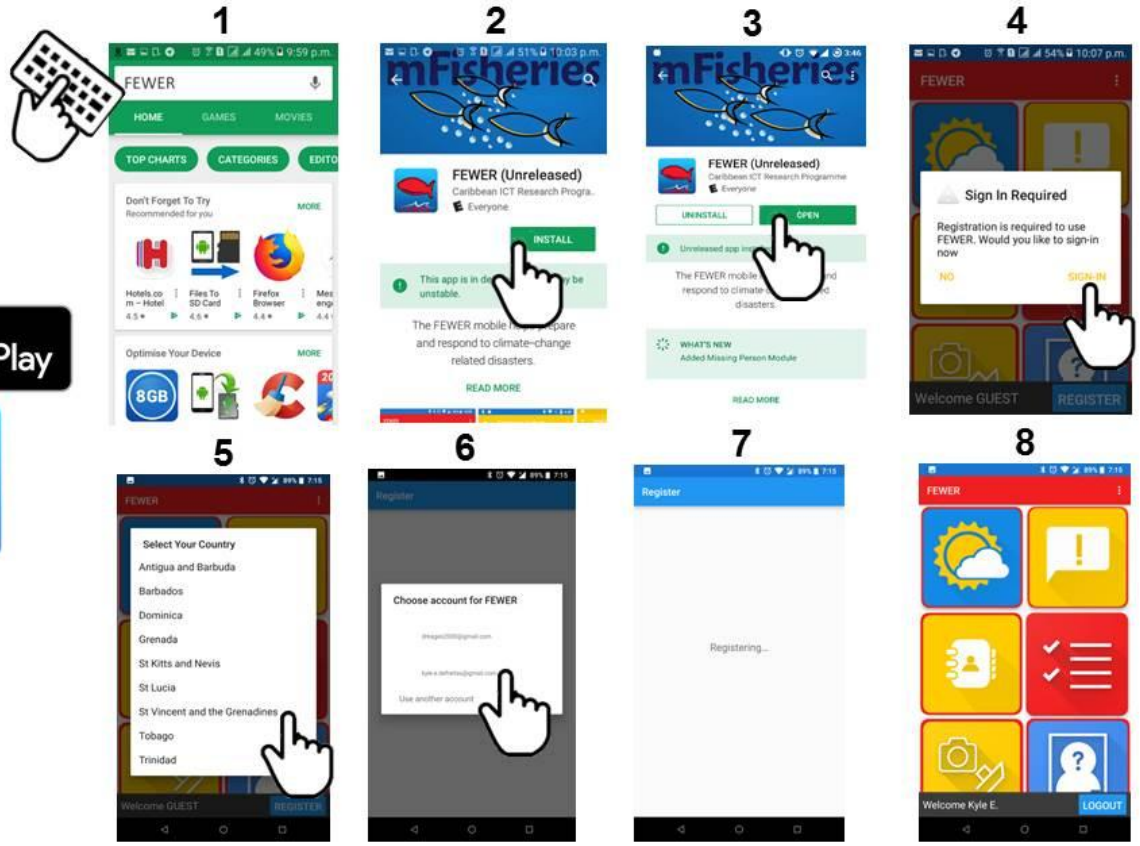
QUESTIONS?


Dominica
Martinique
Castries City
Saint Lucia
St Vincent
and the
Grenadines
Grenada

Appendix B.10. Hands-on Activity with Mobile Phone



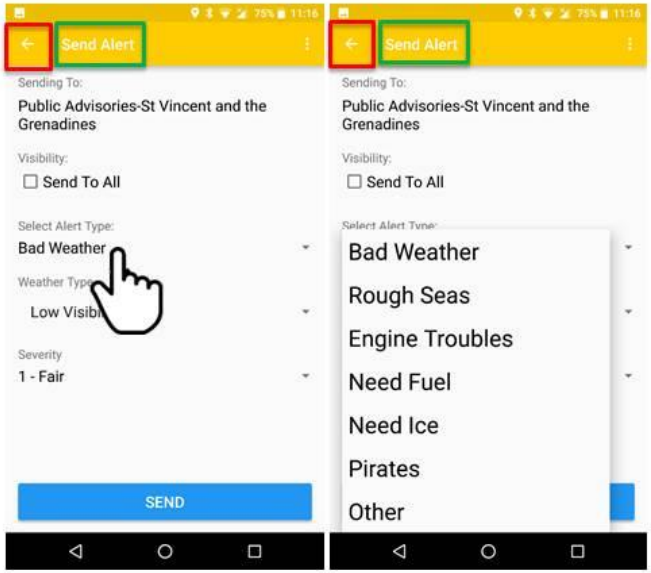
Get FEWER Mobile App



Core Concepts

Move between Tabs

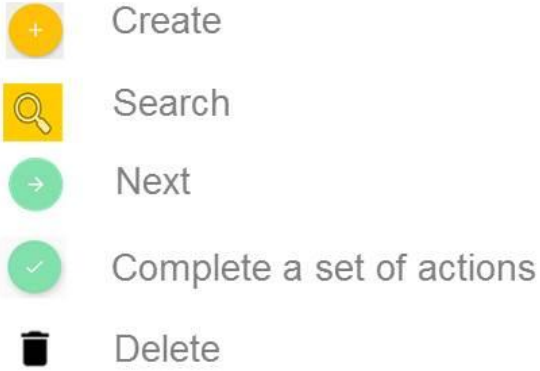
Select from Dropdown list



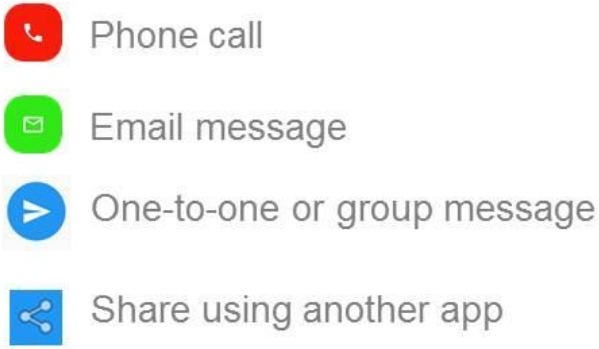
View Notification from Notification Bar

Weather specific

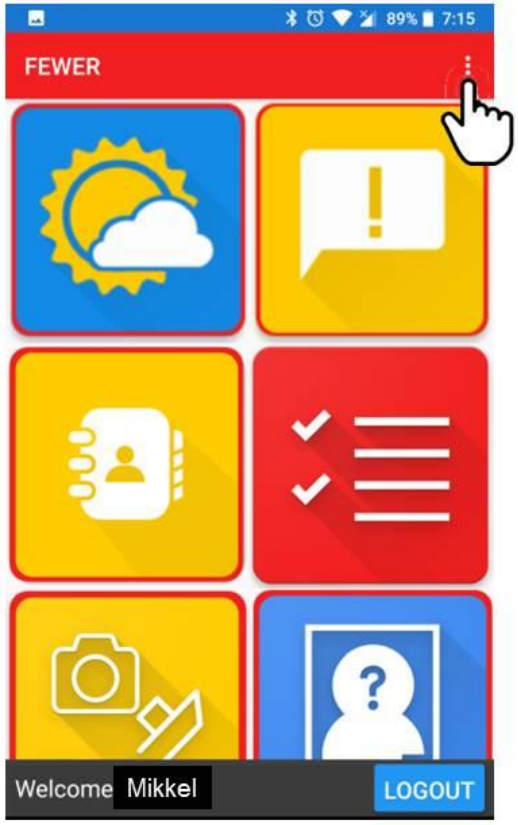
Action Icons

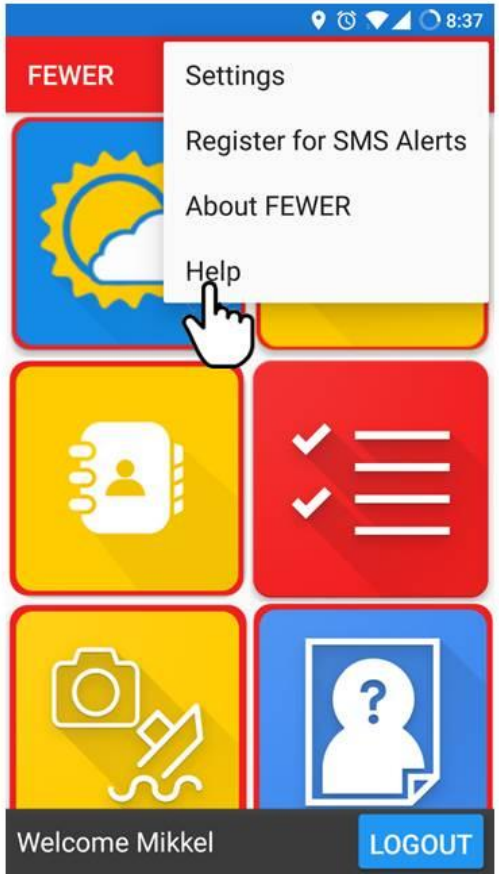


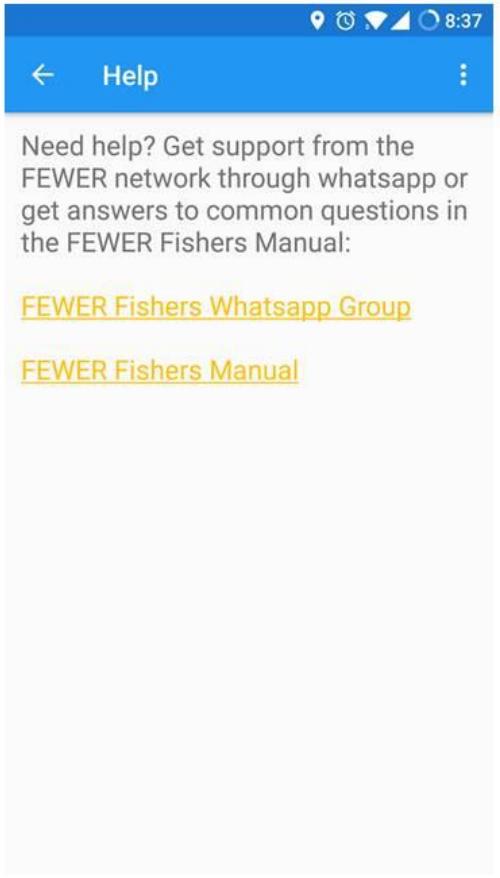
Communications Icons



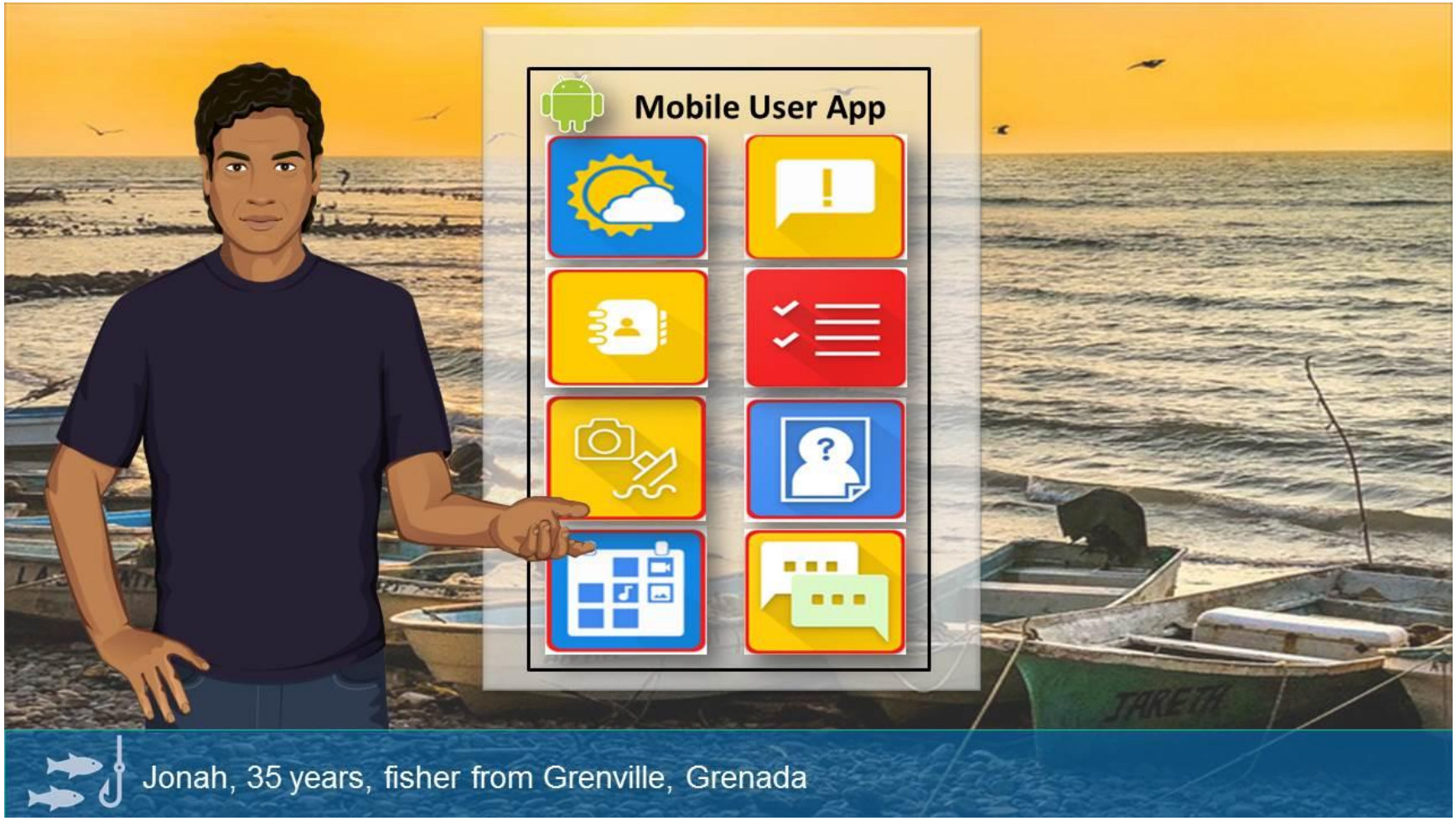
Need Help?


89% 7:15
FEWER
Welcome Mikkel
LOGOUT

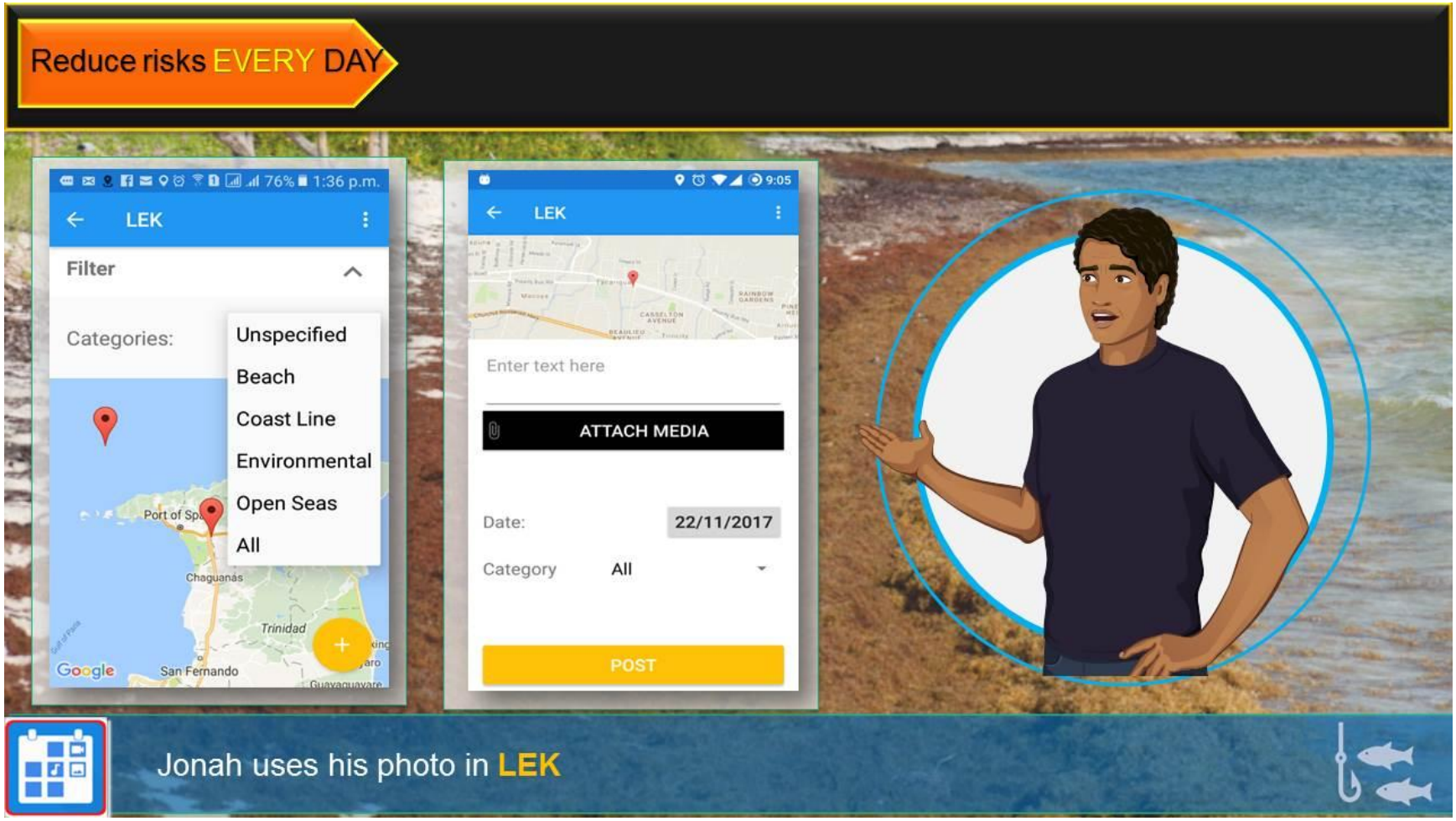

8:37
FEWER
Settings
Register for SMS Alerts
About FEWER
Help
Welcome Mikkel
LOGOUT

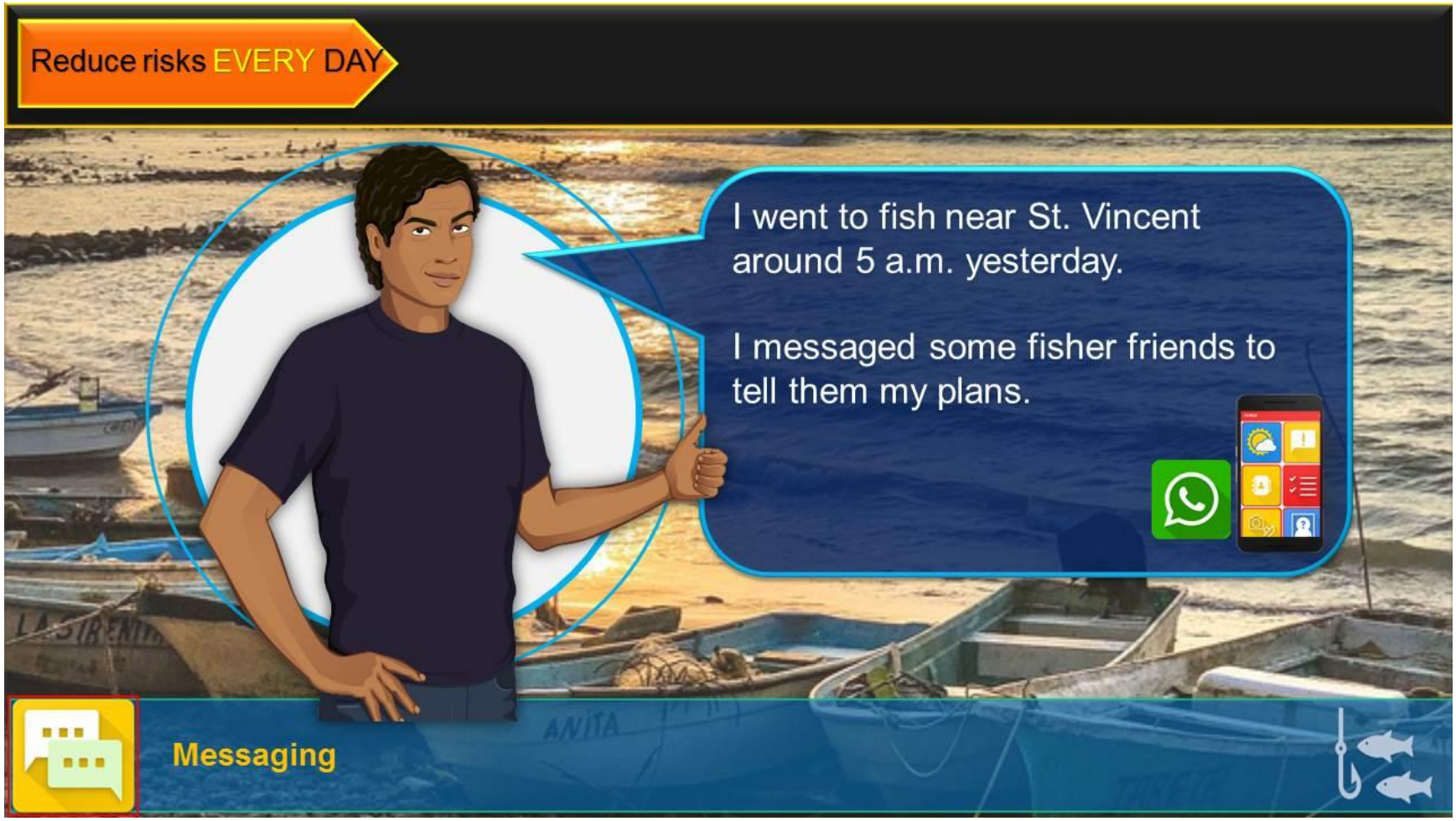

8:37
Help
Need help? Get support from the FEWER network through whatsapp or get answers to common questions in the FEWER Fishers Manual:
FEWER Fishers Whatsapp Group
FEWER Fishers Manual

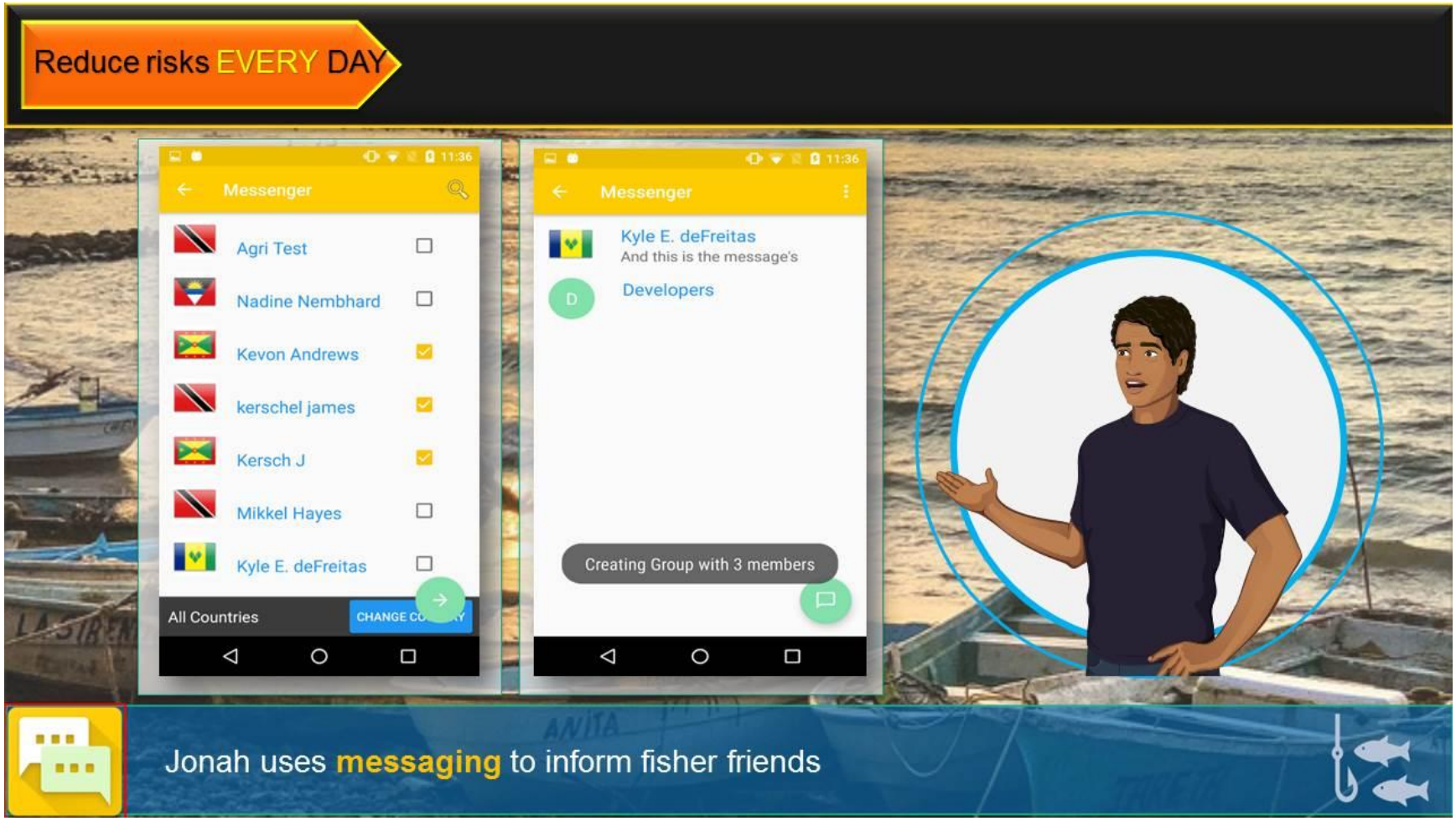
Appendix B.11. FEWER Walk-through

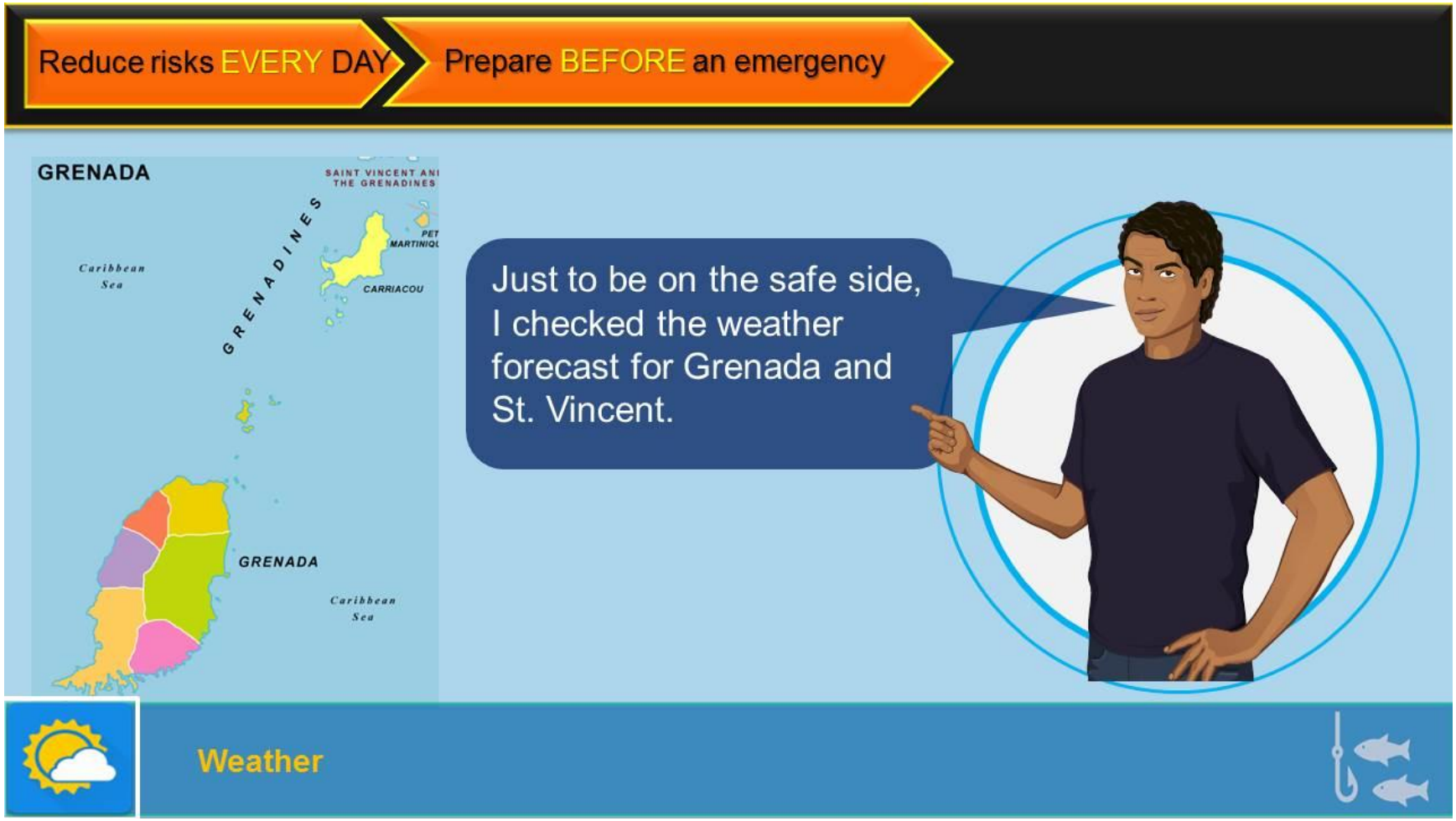

Mobile User App
Jonah, 35 years, fisher from Grenville, Grenada


Reduce risks EVERY DAY
Oh gosh, look **sargassum** again!
I took a picture with my phone.
Local Ecological Knowledge (LEK)

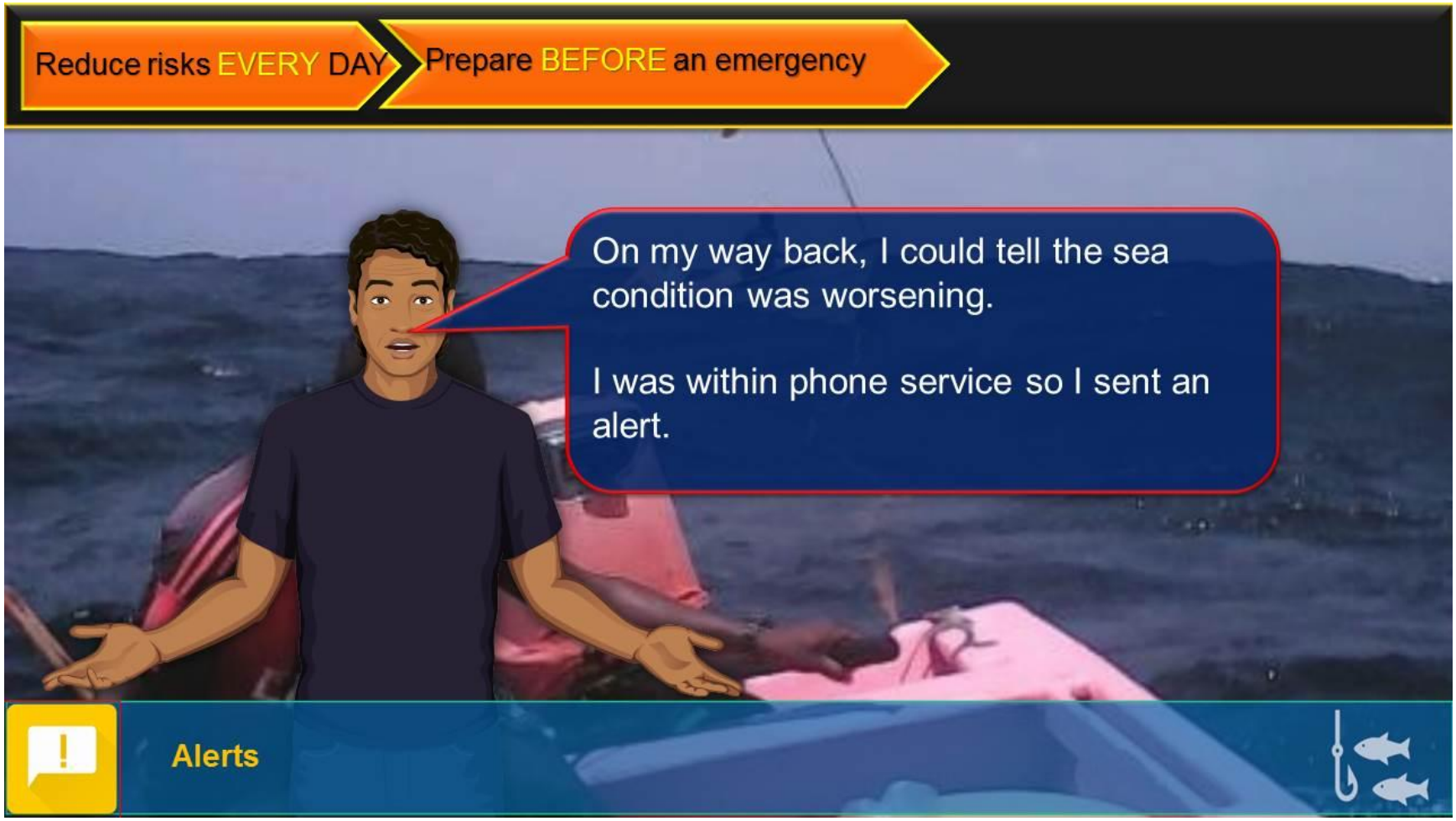

Reduce risks EVERY DAY
LEK
Filter
Categories:
Unspecified
Beach
Coast Line
Environmental
Open Seas
All
Port of Spa
Chaguanas
Trinidad
San Fernando
Google
LEK
Enter text here
ATTACH MEDIA
Date:
22/11/2017
Category
All
POST
Jonah uses his photo in LEK

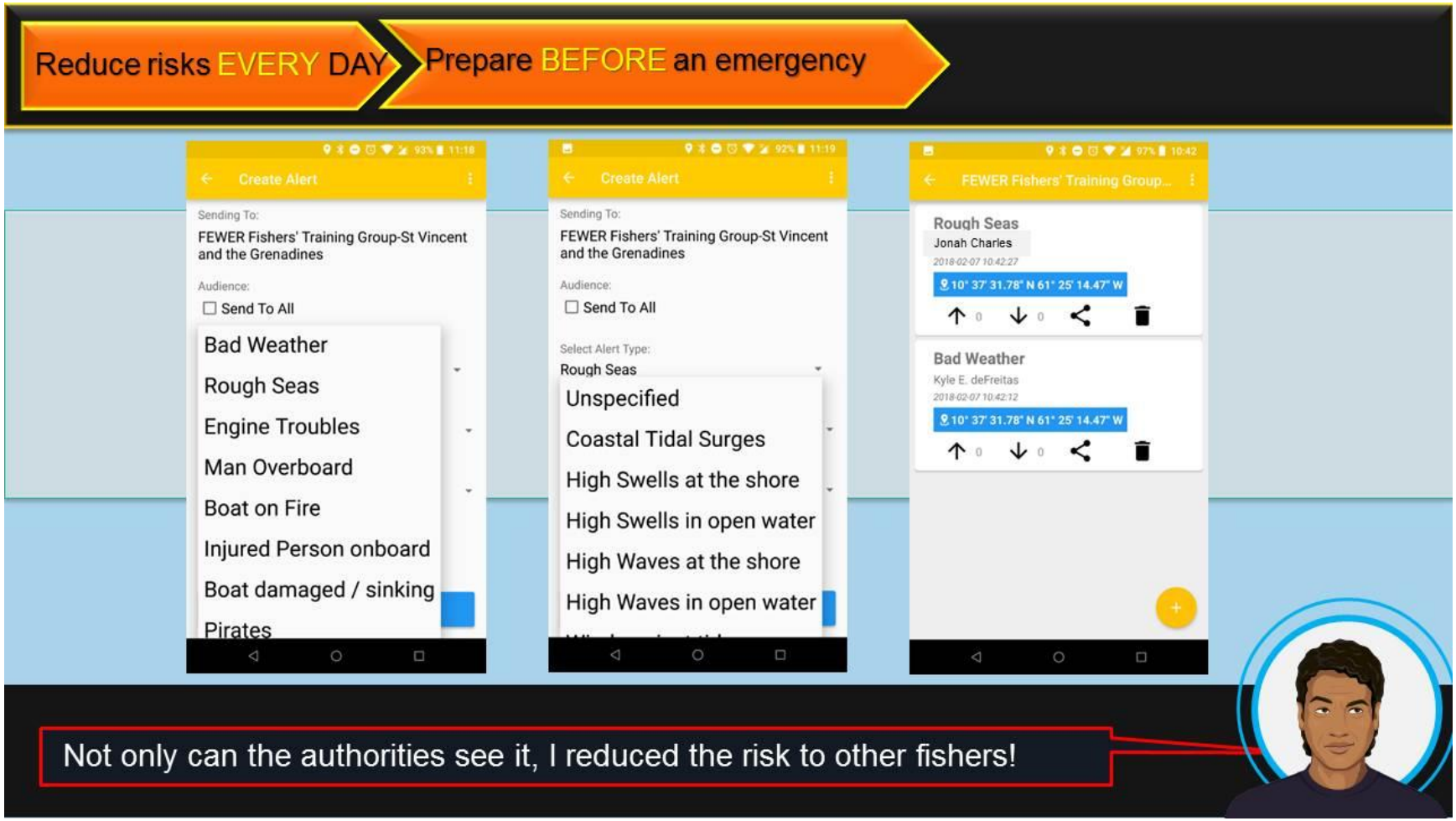

Reduce risks EVERY DAY
I went to fish near St. Vincent around 5 a.m. yesterday.
I messaged some fisher friends to tell them my plans.
Messaging


Reduce risks EVERY DAY
11:36
Messenger
Agri Test
Nadine Nembhard
Kevon Andrews
kerschel james
Kersch J
Mikkel Hayes
Kyle E. deFreitas
All Countries
11:36
Messenger
Kyle E. deFreitas
And this is the message's
Developers
Creating Group with 3 members
Jonah uses messaging to inform fisher friends

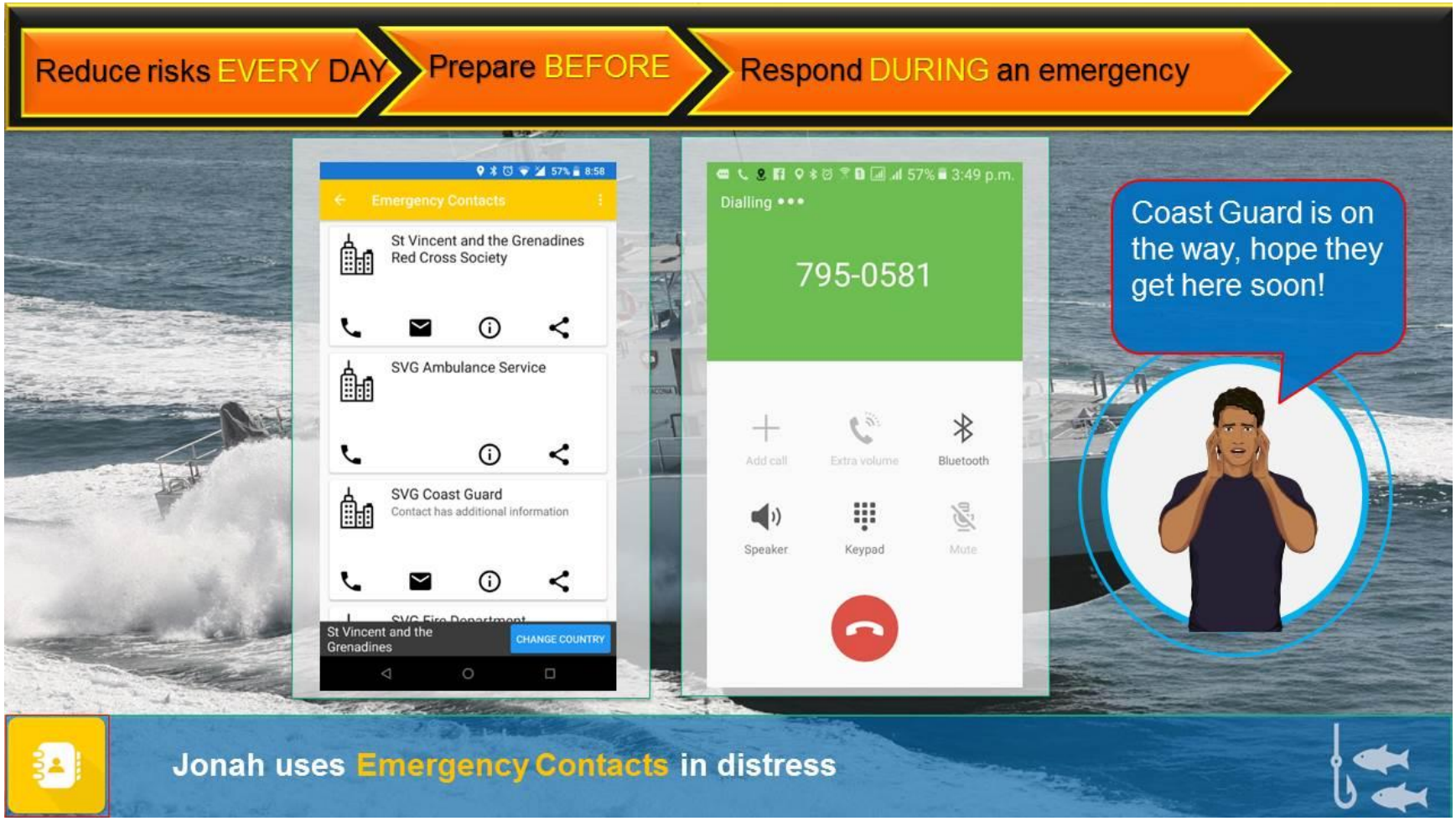

Reduce risks EVERY DAY
Prepare BEFORE an emergency
GRENADA
SAINT VINCENT AN
THE GRENADINES
GRENADINES
Caribbean Sea
CARRIACOU
GRENADA
Caribbean Sea
Just to be on the safe side, I checked the weather forecast for Grenada and St. Vincent.
Weather

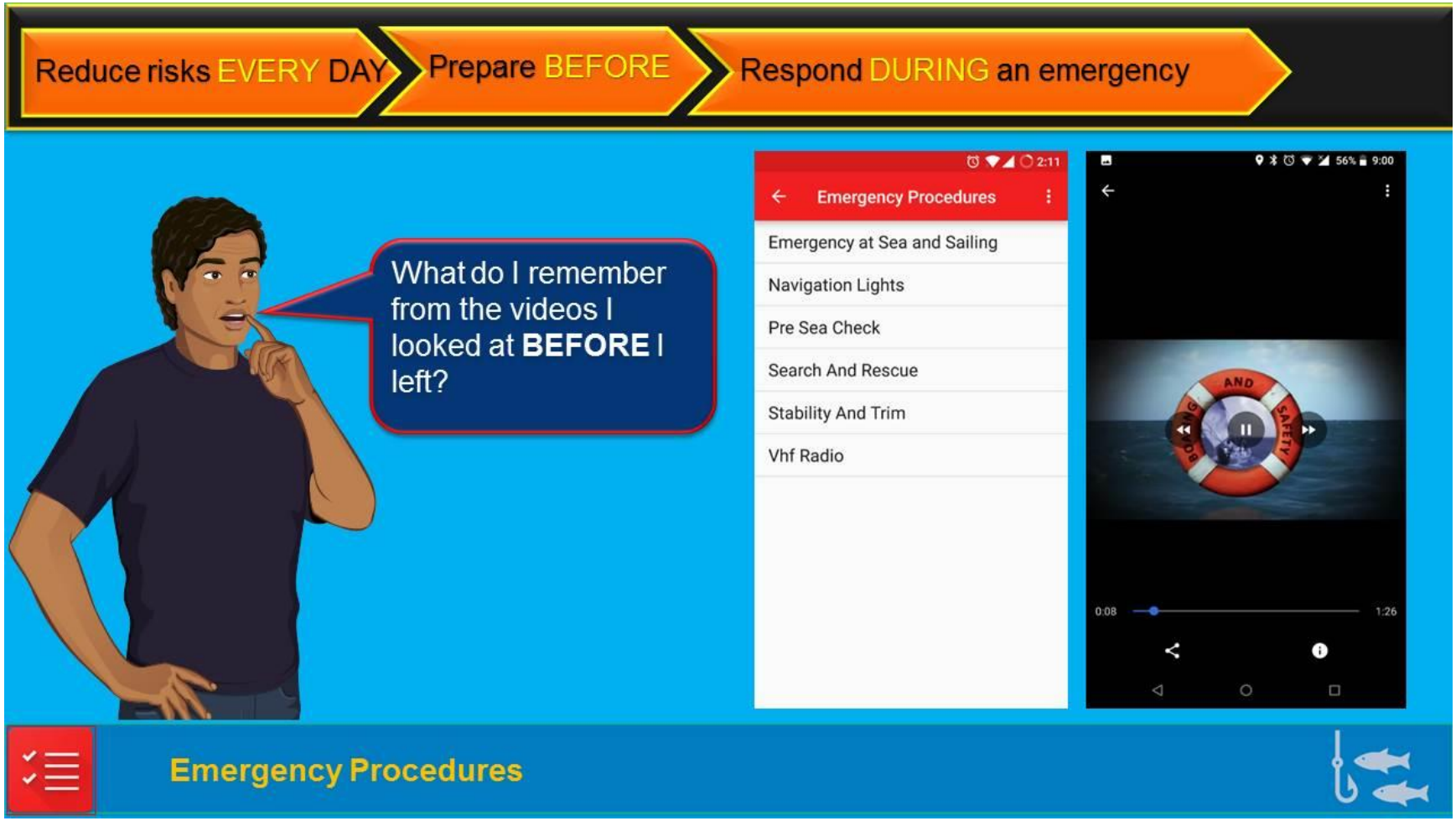

Reduce risks EVERY DAY
Prepare BEFORE an emergency
Weather
WEATHER
TIDES
SUGGESTED APPS
Source: Open Weather
23 °C
Rain
Cloudy: 75%
More Details
Wed
Thu
Fri
Sat
23 - 25 °C
26 - 27 °C
26 - 27 °C
26 - 27 °C
Rain
Clear
Rain
Rain
Displaying Weather for: Grenada
CHANGE COUNTRY
Weather Details
Source: Grenada - MET Office
Select Your Country
Antigua and Barbuda
Barbados
Dominica
Grenada
St Kitts and Nevis
St Lucia
St Vincent and the Grenadines
Tobago
Trinidad
Date
Displaying Weather Details for: Grenada
CHANGE COUNTRY
Weather
WEATHER
TIDES
Source: Open Weather
24 °C
Rain
Cloudy: 40%
Fish with caution
More Details
Mon
Tue
I taking my chances
Displaying Weather
Grenada
Jonah uses Weather to decide if he should go

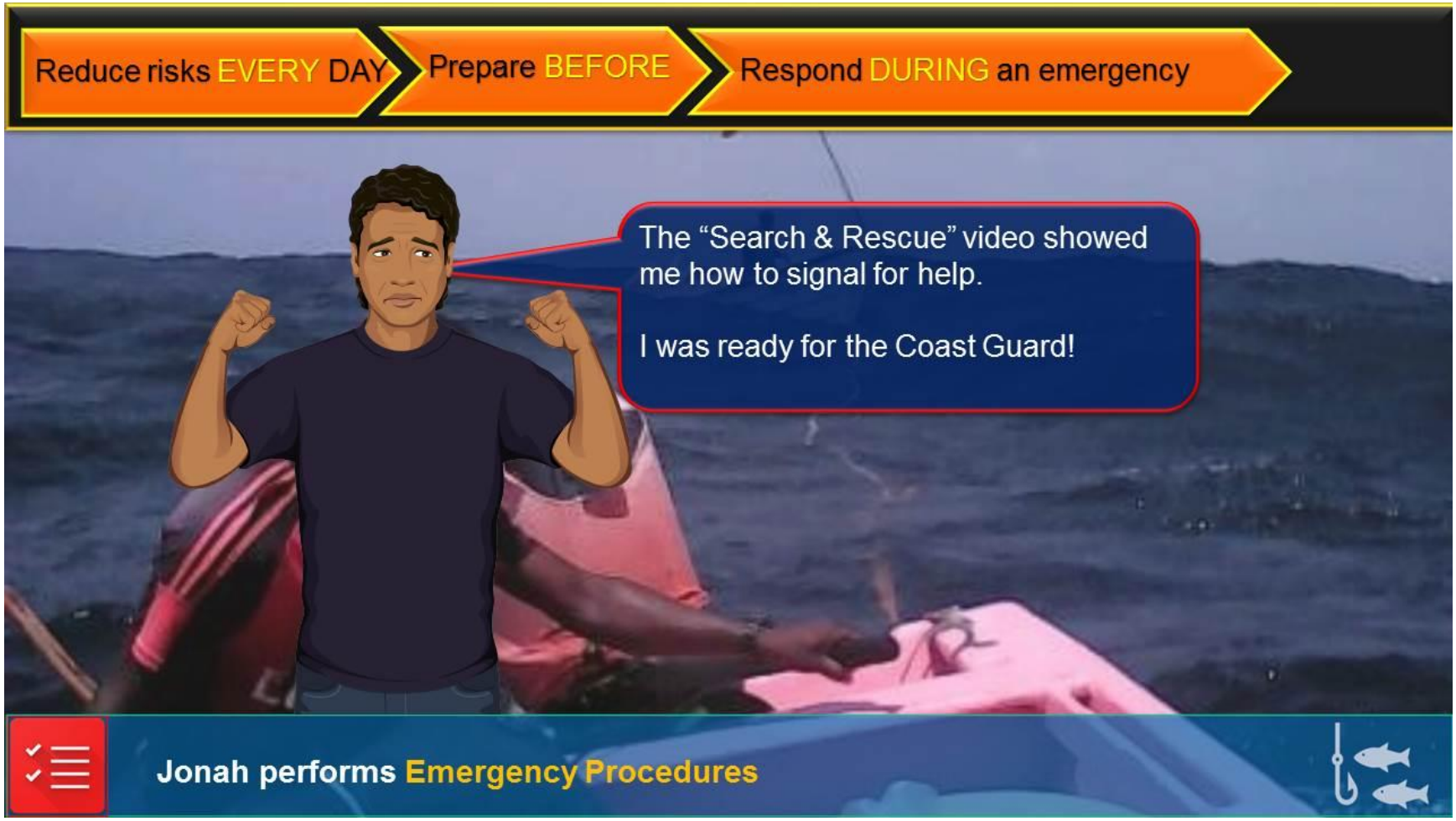

Reduce risks EVERY DAY
Prepare BEFORE an emergency
On my way back, I could tell the sea condition was worsening.
I was within phone service so I sent an alert.
Alerts


Reduce risks EVERY DAY
Prepare BEFORE an emergency
Create Alert
Sending To:
FEWER Fishers' Training Group-St Vincent and the Grenadines
Audience:
Send To All
Bad Weather
Rough Seas
Engine Troubles
Man Overboard
Boat on Fire
Injured Person onboard
Boat damaged / sinking
Pirates
Create Alert
Sending To:
FEWER Fishers' Training Group-St Vincent and the Grenadines
Audience:
Send To All
Select Alert Type:
Rough Seas
Unspecified
Coastal Tidal Surges
High Swells at the shore
High Swells in open water
High Waves at the shore
High Waves in open water
FEWER Fishers' Training Group...
Rough Seas
Jonah Charles
2018-02-07 10:42:27
10° 37' 31.78" N 61° 25' 14.47" W
Bad Weather
Kyle E. deFreitas
2018-02-07 10:42:12
10° 37' 31.78" N 61° 25' 14.47" W
Not only can the authorities see it, I reduced the risk to other fishers!

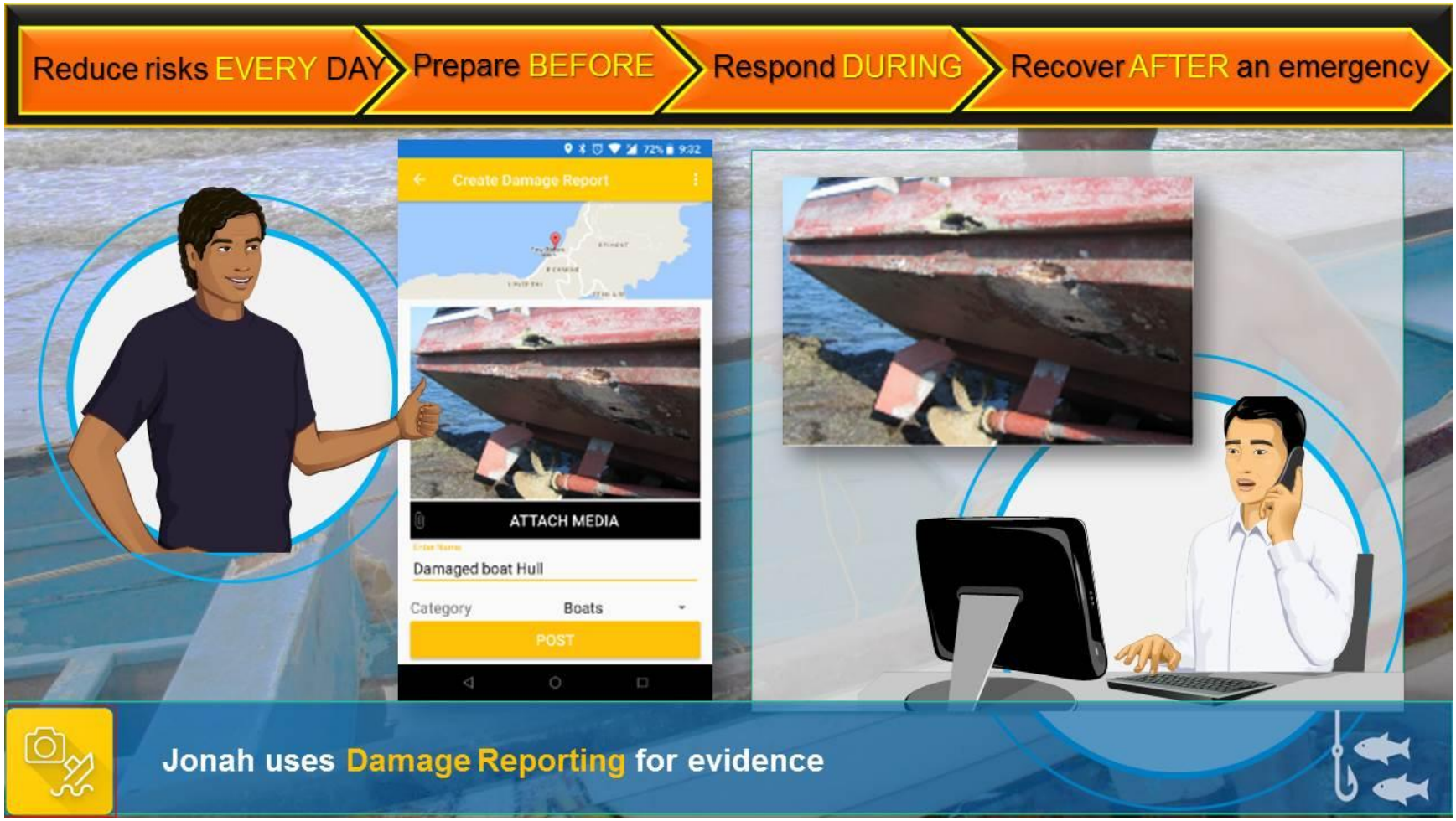

Reduce risks EVERY DAY
Prepare BEFORE
Respond DURING an emergency
My boat took in water!
I needed to call or radio the Coast Guard.
Emergency Contacts

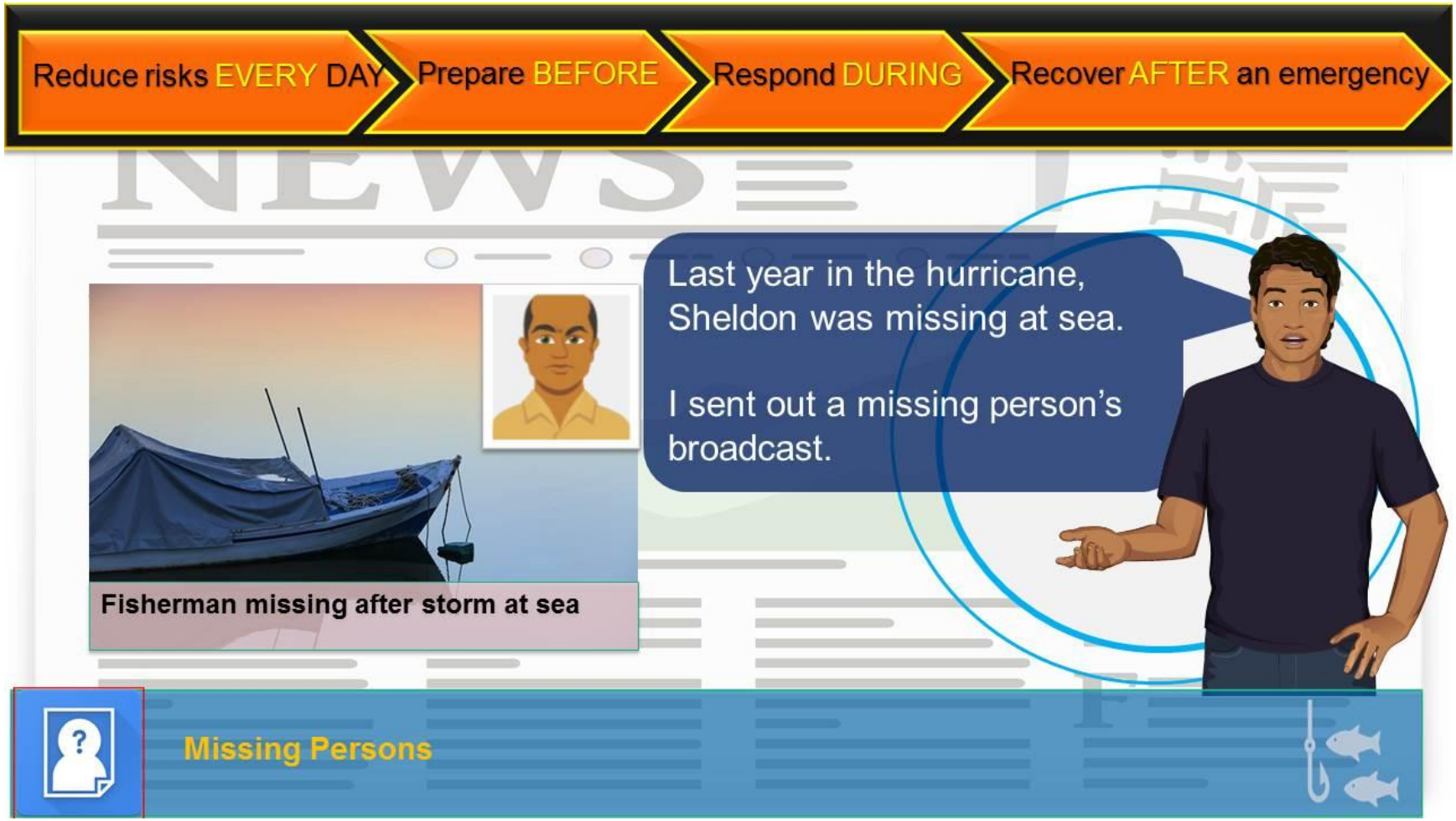

Reduce risks EVERY DAY
Prepare BEFORE
Respond DURING an emergency
Emergency Contacts
St Vincent and the Grenadines Red Cross Society
SVG Ambulance Service
SVG Coast Guard
Contact has additional information
St Vincent and the Grenadines
CHANGE COUNTRY
Dialling
795-0581
Add call
Extra volume
Bluetooth
Speaker
Keypad
Mute
Coast Guard is on the way, hope they get here soon!
Jonah uses Emergency Contacts in distress

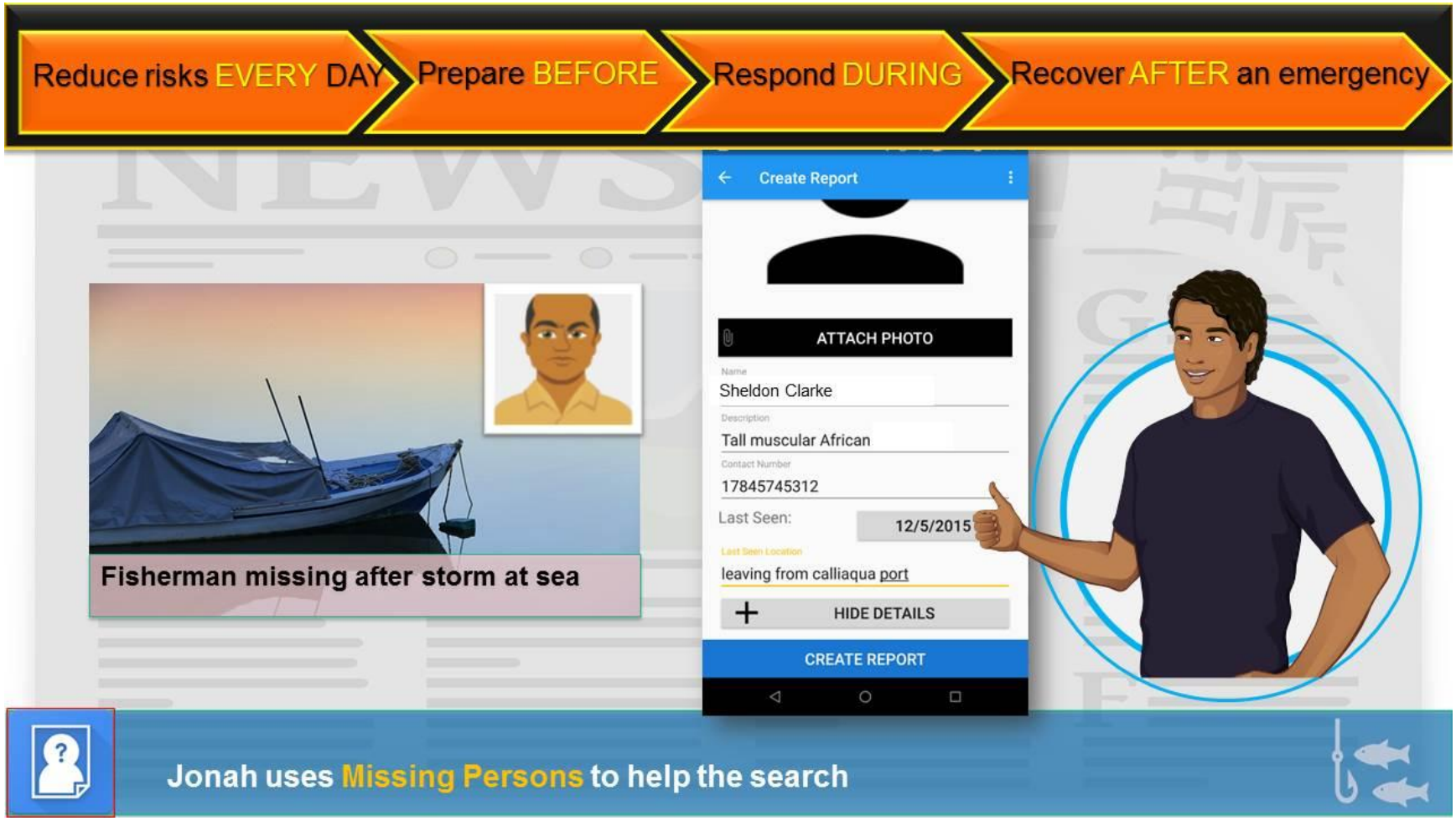

Reduce risks EVERY DAY
Prepare BEFORE
Respond DURING an emergency
What do I remember from the videos I looked at BEFORE I left?
Emergency Procedures
Emergency at Sea and Sailing
Navigation Lights
Pre Sea Check
Search And Rescue
Stability And Trim
Vhf Radio
0:08
1:26
Emergency Procedures


Reduce risks EVERY DAY
Prepare BEFORE
Respond DURING an emergency
The “Search & Rescue” video showed me how to signal for help.
I was ready for the Coast Guard!
Jonah performs Emergency Procedures


Reduce risks EVERY DAY
Prepare BEFORE
Respond DURING
Recover AFTER an emergency
Back on shore safely.
Relieved that it didn't turn out like last year when the boat got damaged in the hurricane.
Damage Reporting


Reduce risks EVERY DAY
Prepare BEFORE
Respond DURING
Recover AFTER an emergency
Create Damage Report
ATTACH MEDIA
Damaged boat Hull
Category
Boats
POST
Jonah uses Damage Reporting for evidence


Reduce risks EVERY DAY
Prepare BEFORE
Respond DURING
Recover AFTER an emergency
Fisherman missing after storm at sea
Last year in the hurricane, Sheldon was missing at sea.
I sent out a missing person's broadcast.
Missing Persons


Reduce risks EVERY DAY
Prepare BEFORE
Respond DURING
Recover AFTER an emergency
Fisherman missing after storm at sea
Create Report
ATTACH PHOTO
Name
Sheldon Clarke
Description
Tall muscular African
Contact Number
17845745312
Last Seen:
12/5/2015
Last Seen Location
leaving from calliaqua port
HIDE DETAILS
CREATE REPORT
Jonah uses Missing Persons to help the search

What can I do?	Which Module?	
Reduce risks EVERY DAY		LEK
		Messaging
Prepare BEFORE an emergency		Weather
		Alerts
Respond DURING an emergency		Emergency Contacts
		Emergency Procedures
Recover AFTER an emergency		Damage Reporting
		Missing Persons

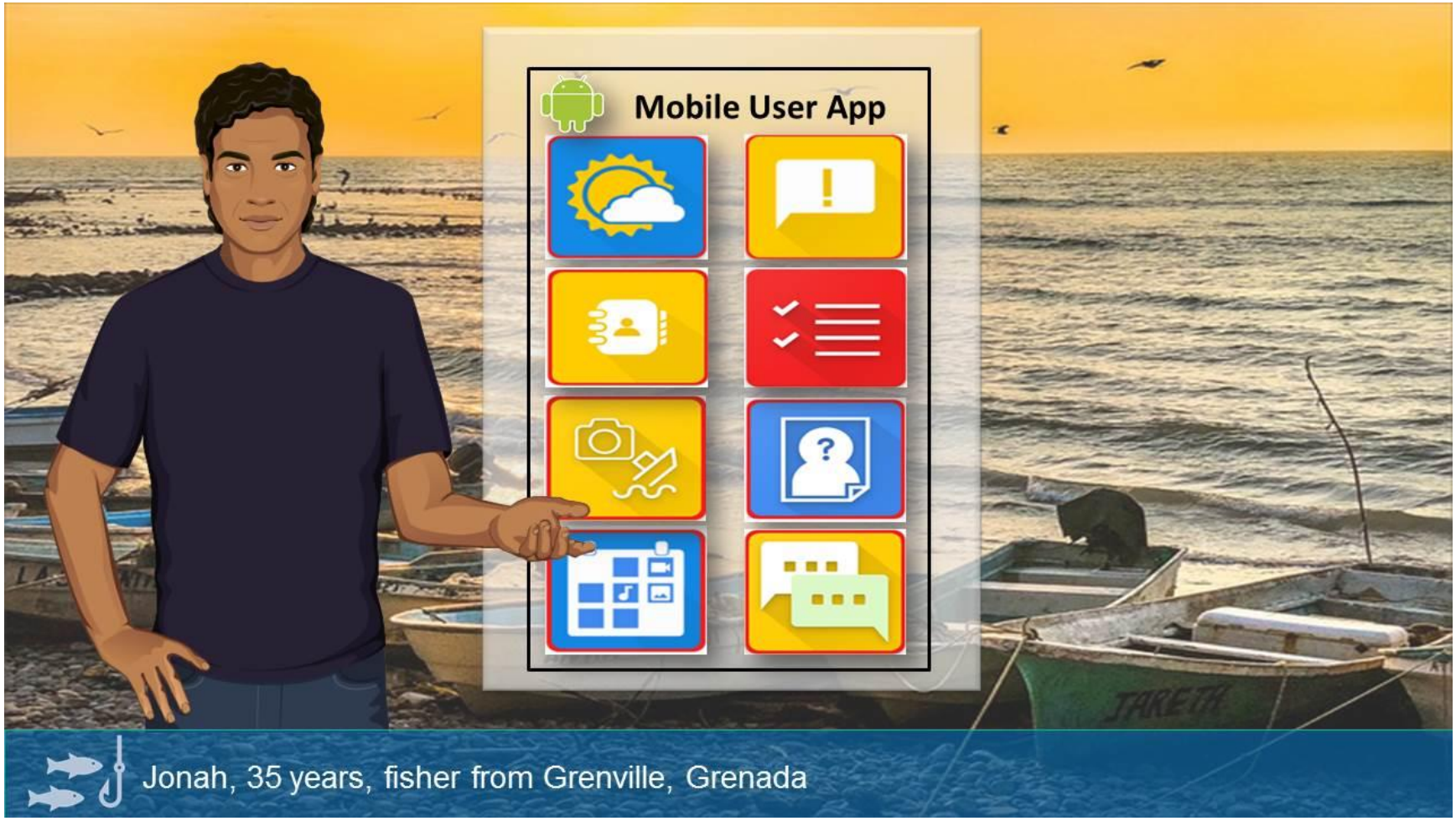

Keeping in Touch
Get help and keep in touch on the FEWER Fishers GND Whatsapp group:
https://tinyurl.com/fewerGND.
See FEWER Manual:
https://tinyurl.com/FEWERfisherHelp
PDF


FEWER
Settings
Register for SMS Alerts
About FEWER
Help
Welcome Mikkel
LOGOUT

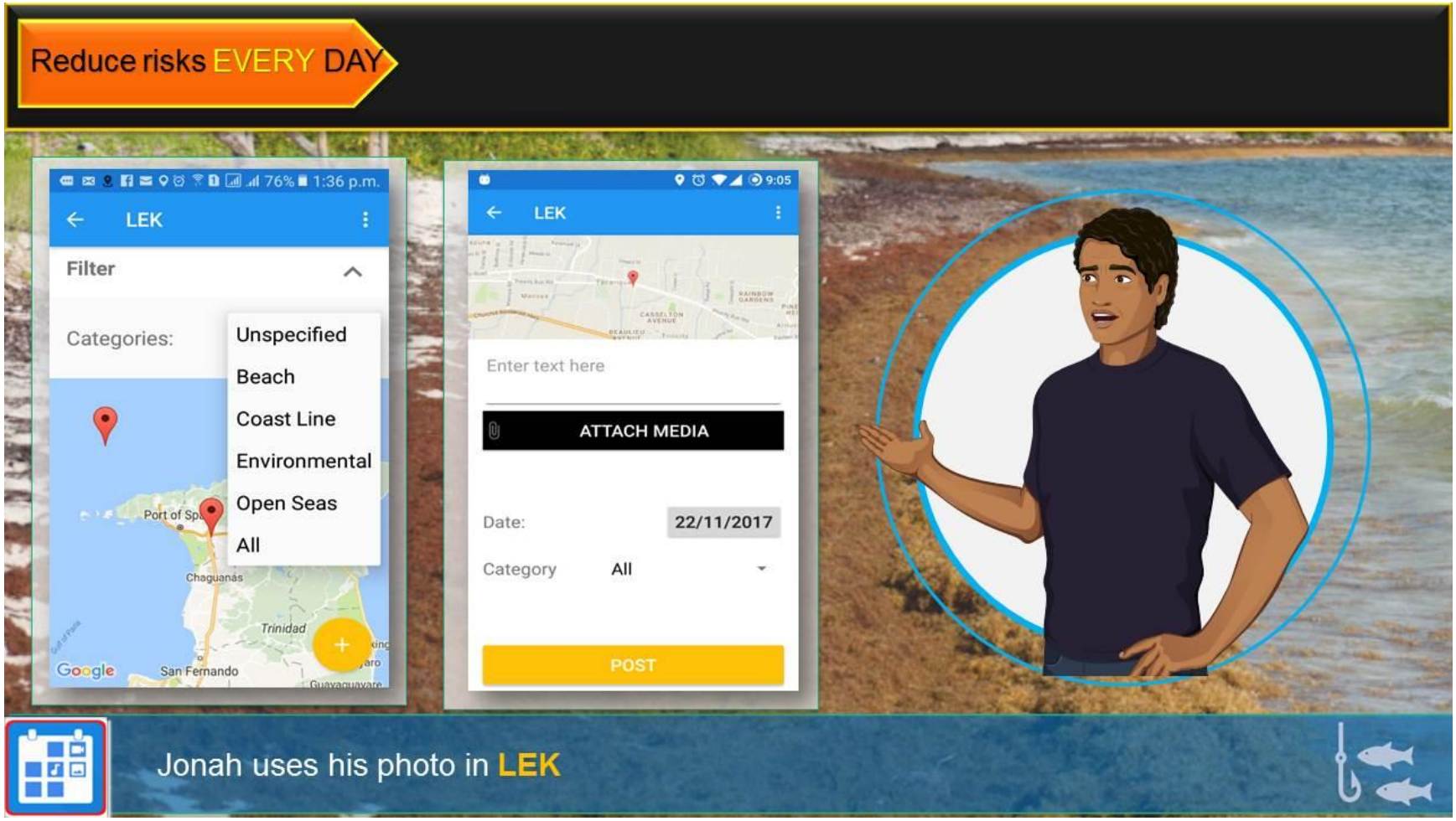

Help
Need help? Get support from the FEWER network through whatsapp or get answers to common questions in the FEWER Fishers Manual:
FEWER Fishers Whatsapp Group
FEWER Fishers Manual

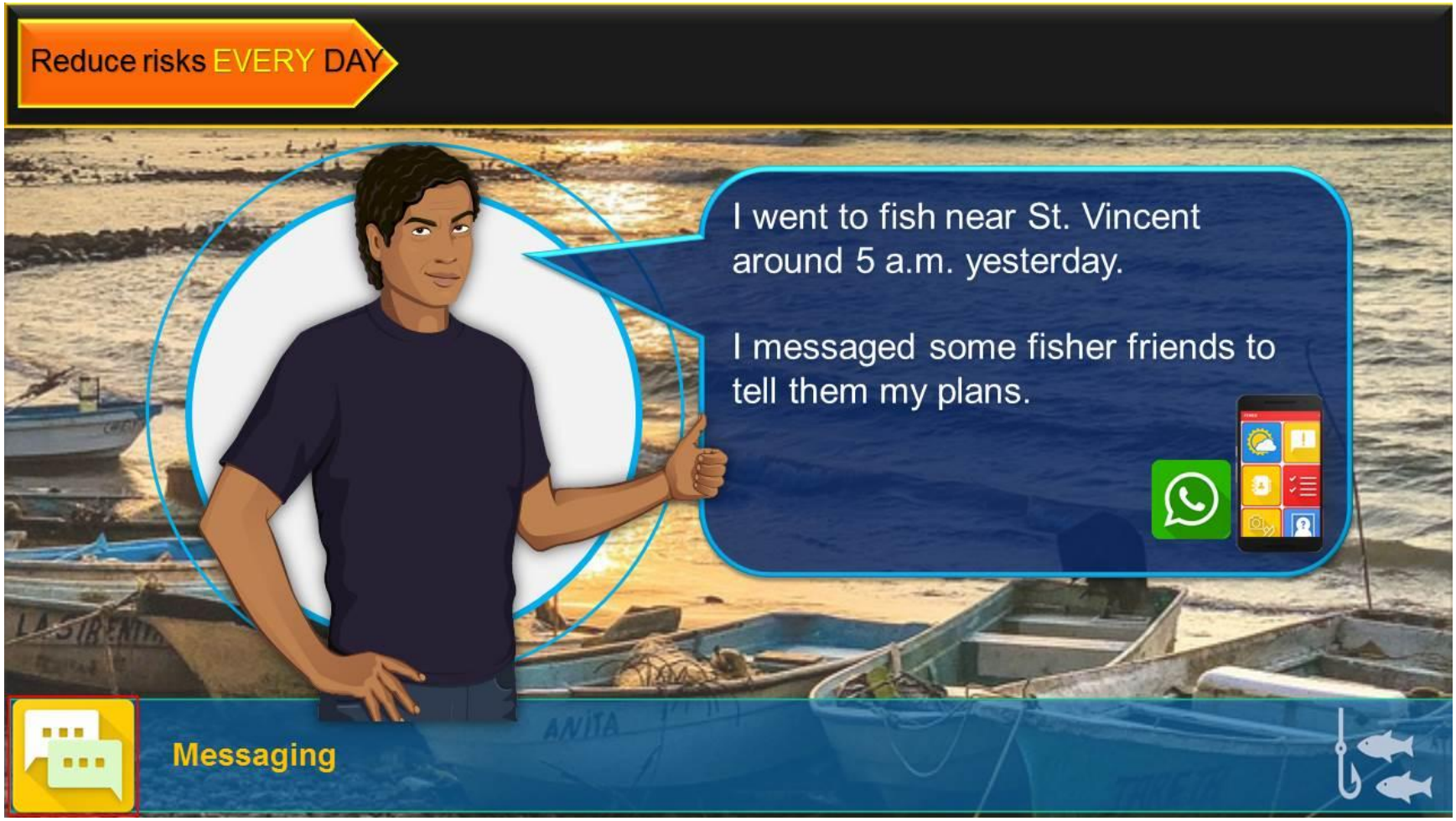

Fisheries Early Warning & Emergency Response
Reduce risks EVERY DAY
Prepare BEFORE
Respond DURING
Recover AFTER an emergency
End of Scenario

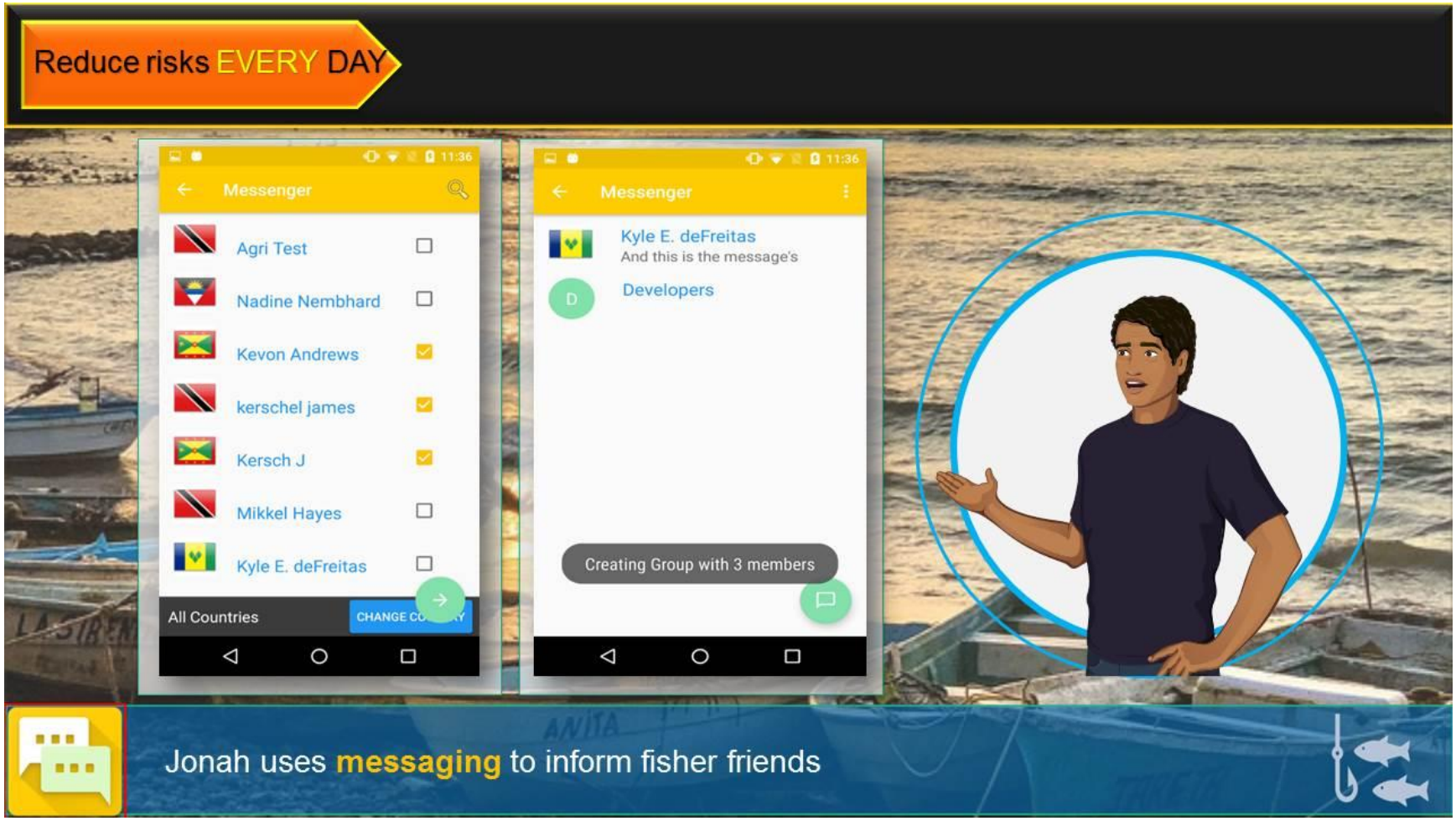
Appendix B.12. Hands-on FEWER Activities


Mobile User App
Jonah, 35 years, fisher from Grenville, Grenada


Reduce risks EVERY DAY
Oh gosh, look **sargassum** again!
I took a picture with my phone.
Local Ecological Knowledge (LEK)


Reduce risks EVERY DAY
LEK
Filter
Categories:
Unspecified
Beach
Coast Line
Environmental
Open Seas
All
Chaguanas
Trinidad
San Fernando
Google
LEK
Enter text here
ATTACH MEDIA
Date:
22/11/2017
Category
All
POST
Jonah uses his photo in LEK


Reduce risks EVERY DAY
I went to fish near St. Vincent around 5 a.m. yesterday.
I messaged some fisher friends to tell them my plans.
Messaging


Reduce risks EVERY DAY
11:36
Messenger
Agri Test
Nadine Nembhard
Kevon Andrews
kerschel james
Kersch J
Mikkel Hayes
Kyle E. deFreitas
All Countries
11:36
Messenger
Kyle E. deFreitas
And this is the message's
D
Developers
Creating Group with 3 members
Jonah uses messaging to inform fisher friends

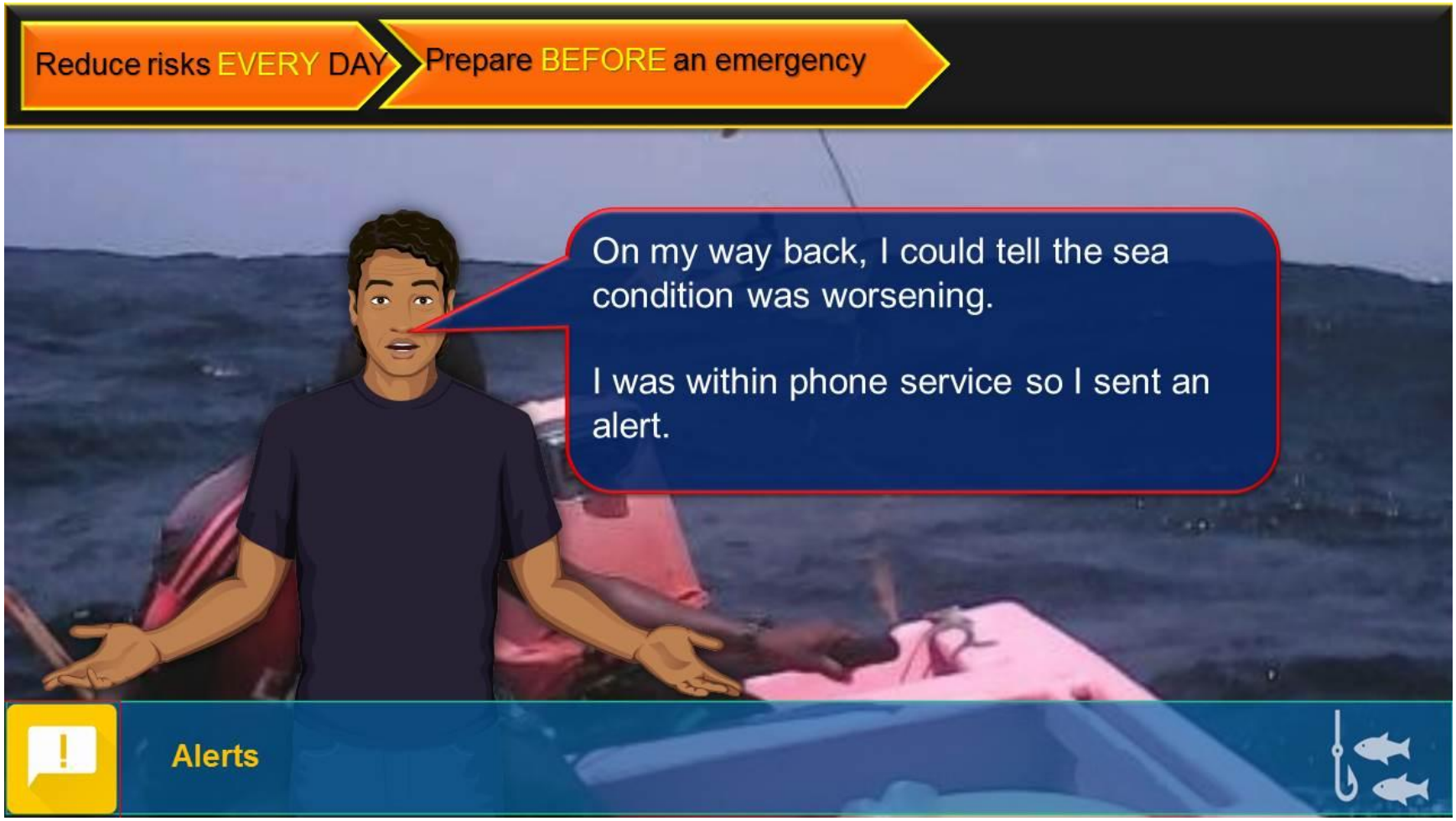
Reduce risks EVERY DAY

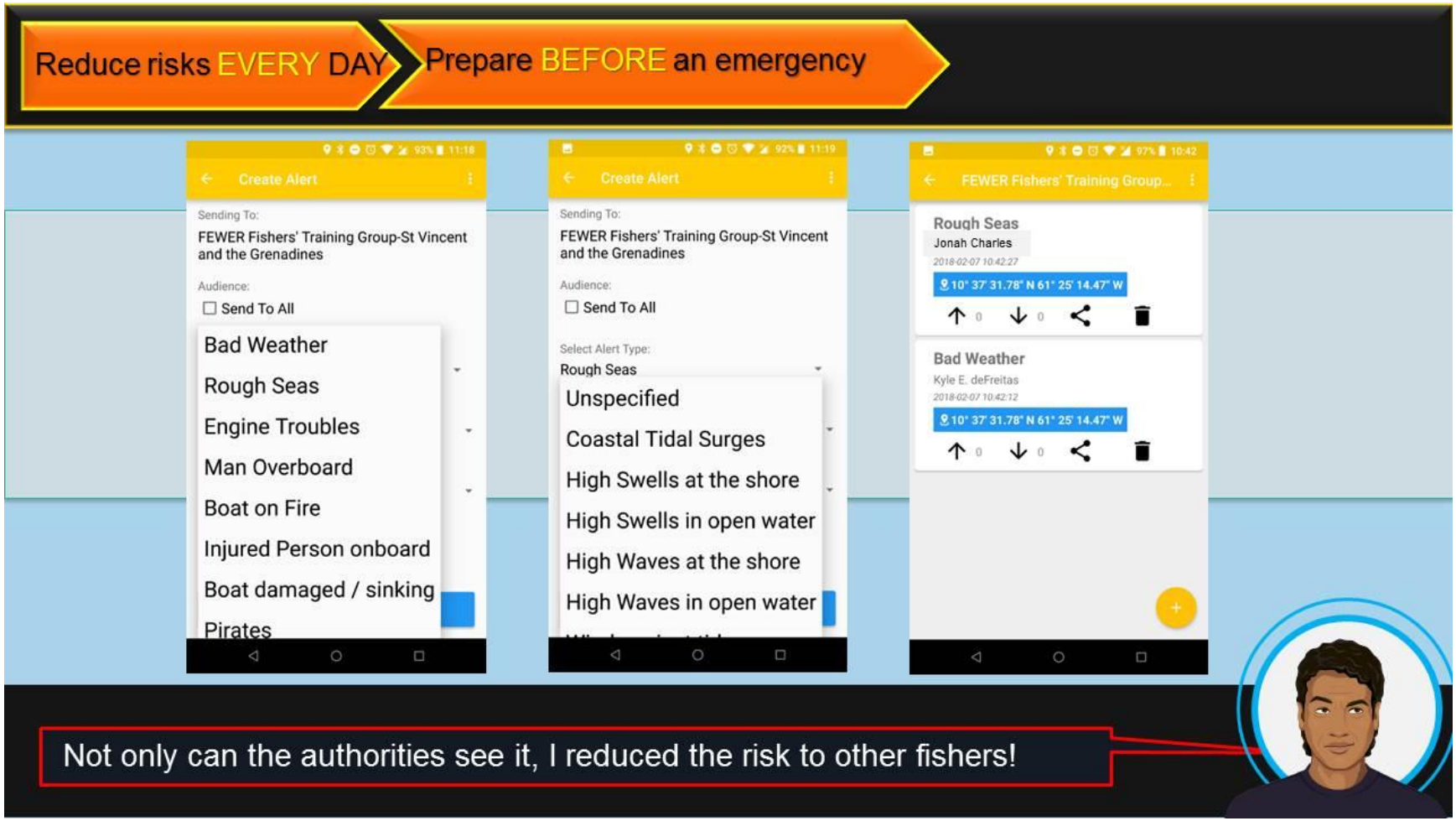
Prepare BEFORE an emergency

Just to be on the safe side, I checked the weather forecast for Grenada and St. Vincent.

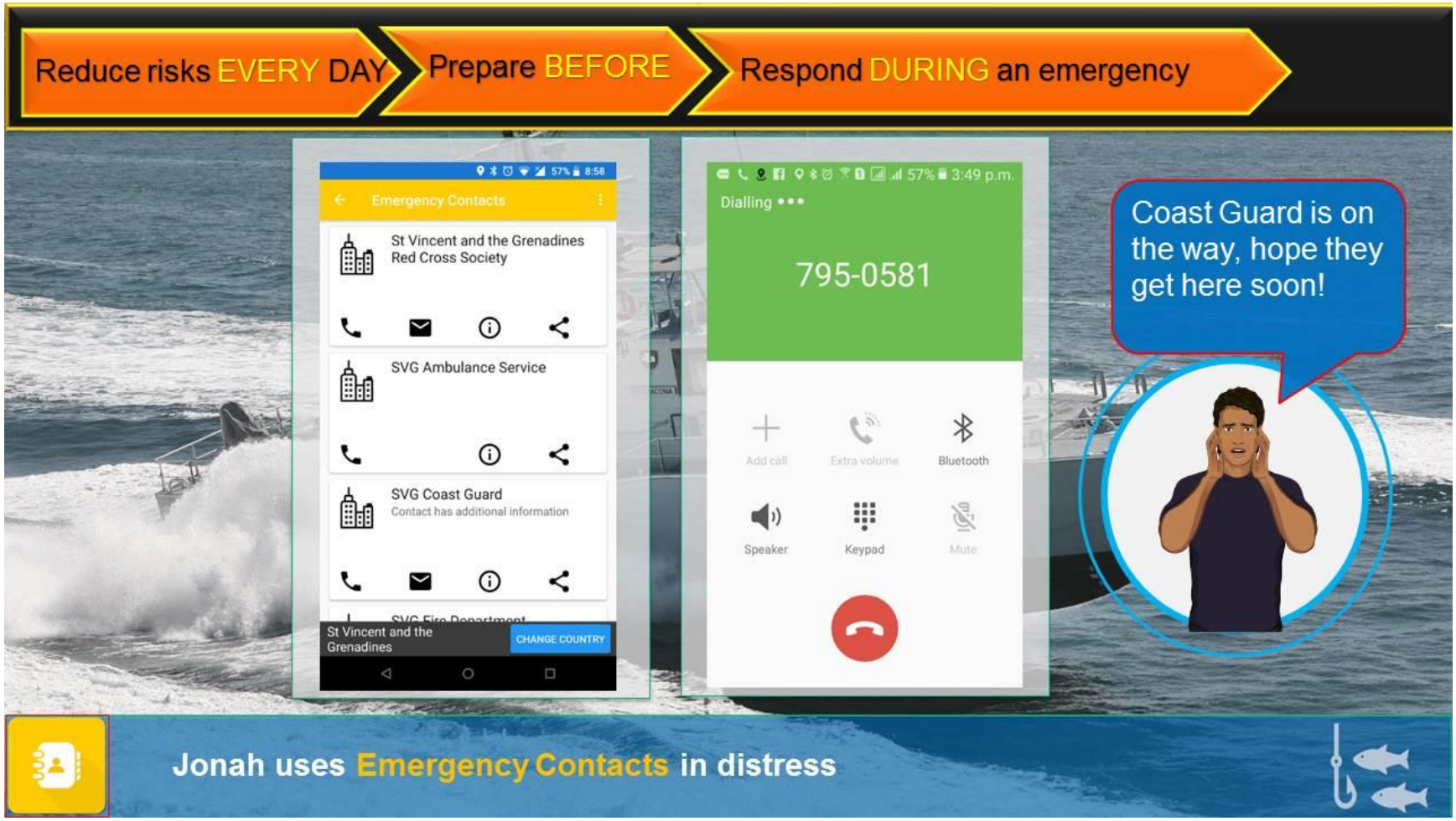
Weather

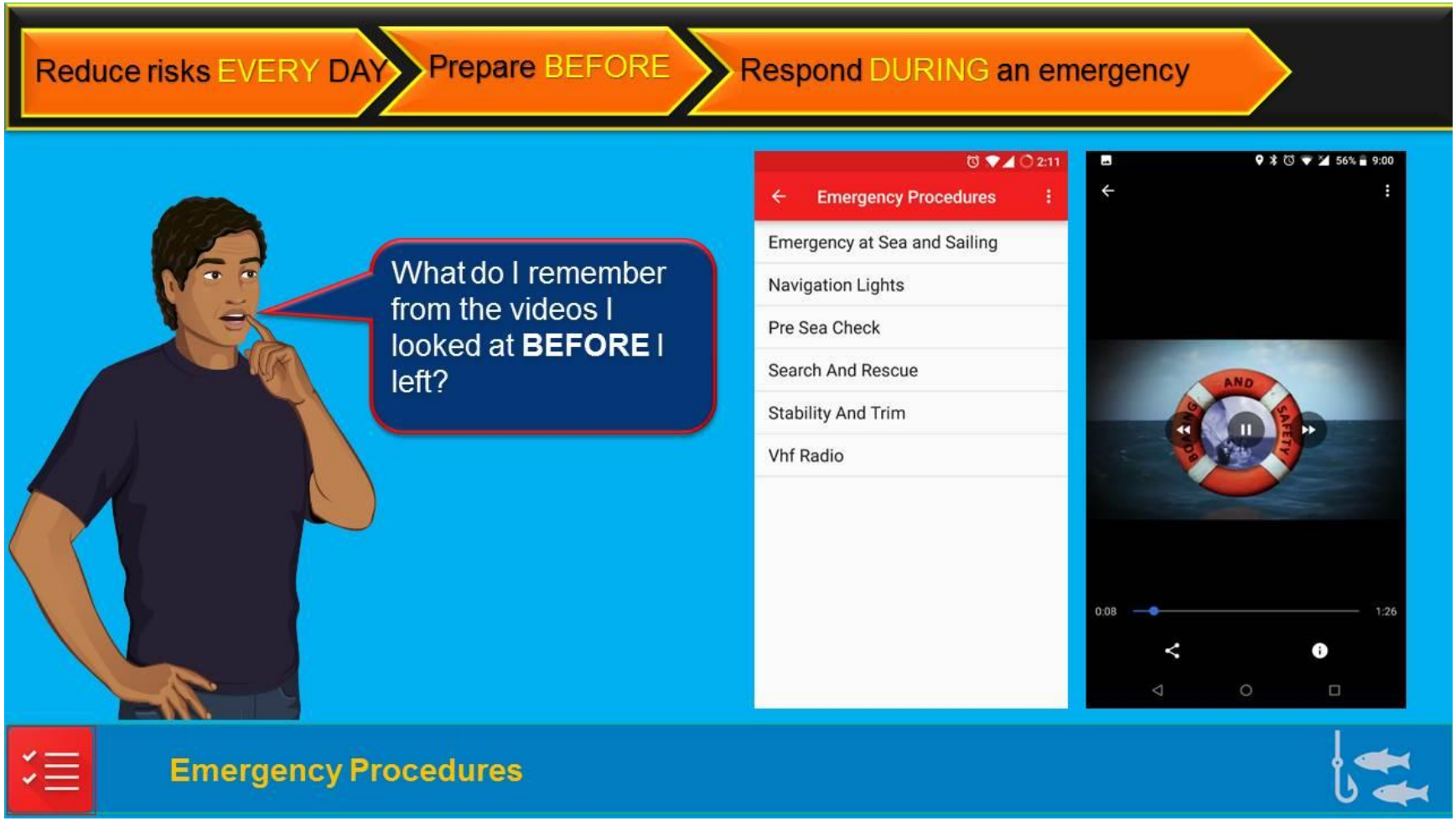

Reduce risks EVERY DAY
Prepare BEFORE an emergency
Weather
WEATHER
TIDES
SUGGESTED APPS
Source: Open Weather
23 °C
Rain
Cloudy: 75%
More Details
Wed
Thu
Fri
Sat
23 - 25 °C
26 - 27 °C
26 - 27 °C
26 - 27 °C
Rain
Clear
Rain
Rain
Displaying Weather for: Grenada
CHANGE COUNTRY
Weather Details
Source: Grenada - MET Office
Select Your Country
Antigua and Barbuda
Barbados
Dominica
Grenada
St Kitts and Nevis
St Lucia
St Vincent and the Grenadines
Tobago
Trinidad
Date
Displaying Weather Details for: Grenada
CHANGE COUNTRY
Weather
WEATHER
TIDES
Source: Open Weather
24 °C
Rain
Cloudy: 40%
Fish with caution
More Details
Mon
Tue
I taking my chances
Displaying Weather
Grenada
Jonah uses Weather to decide if he should go

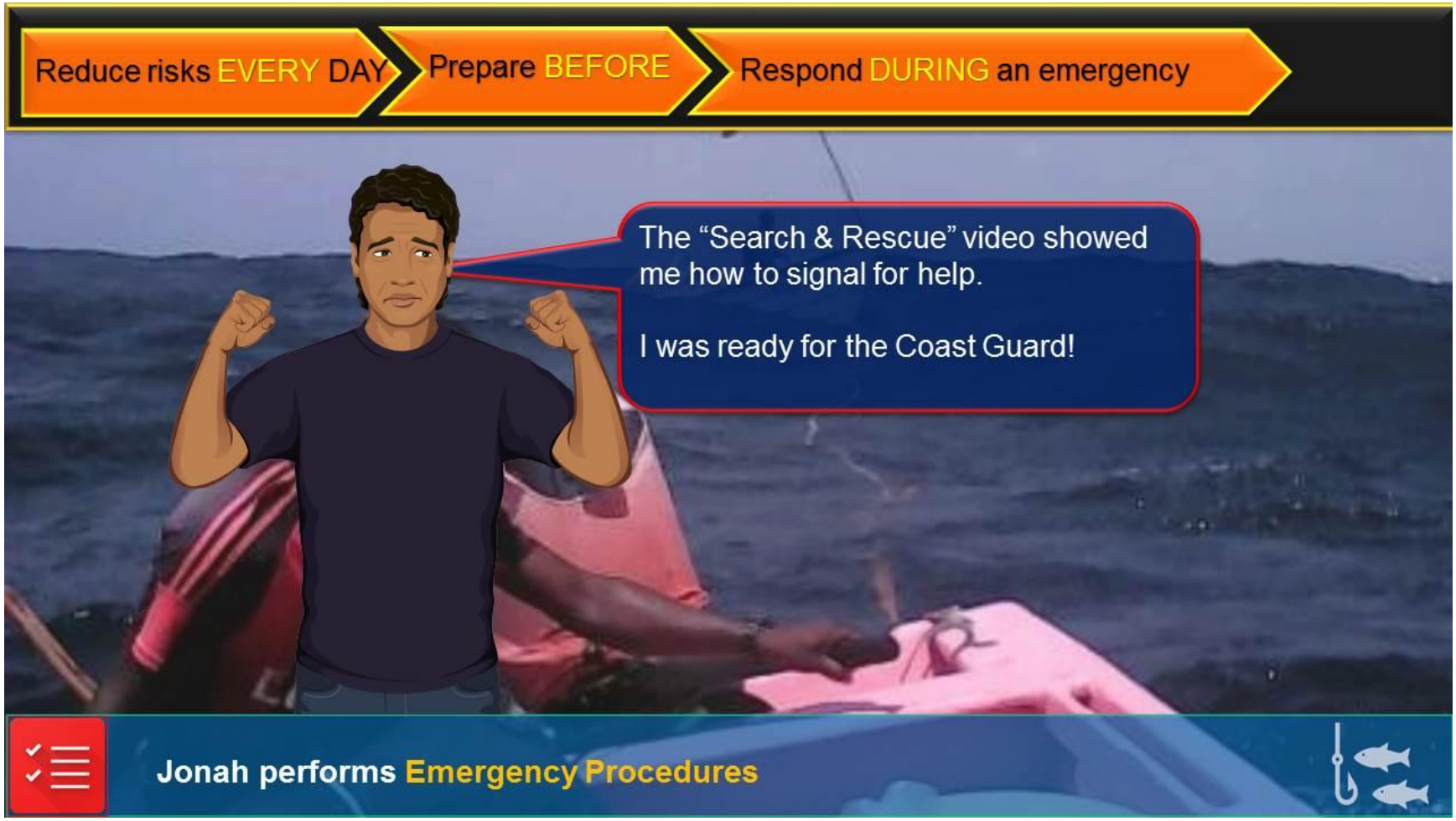

Reduce risks EVERY DAY
Prepare BEFORE an emergency
On my way back, I could tell the sea condition was worsening.
I was within phone service so I sent an alert.
Alerts


Reduce risks EVERY DAY
Prepare BEFORE an emergency
Create Alert
Sending To:
FEWER Fishers' Training Group-St Vincent and the Grenadines
Audience:
Send To All
Bad Weather
Rough Seas
Engine Troubles
Man Overboard
Boat on Fire
Injured Person onboard
Boat damaged / sinking
Pirates
Create Alert
Sending To:
FEWER Fishers' Training Group-St Vincent and the Grenadines
Audience:
Send To All
Select Alert Type:
Rough Seas
Unspecified
Coastal Tidal Surges
High Swells at the shore
High Swells in open water
High Waves at the shore
High Waves in open water
FEWER Fishers' Training Group...
Rough Seas
Jonah Charles
2018-02-07 10:42:27
10° 37' 31.78" N 61° 25' 14.47" W
Bad Weather
Kyle E. deFreitas
2018-02-07 10:42:12
10° 37' 31.78" N 61° 25' 14.47" W
Not only can the authorities see it, I reduced the risk to other fishers!

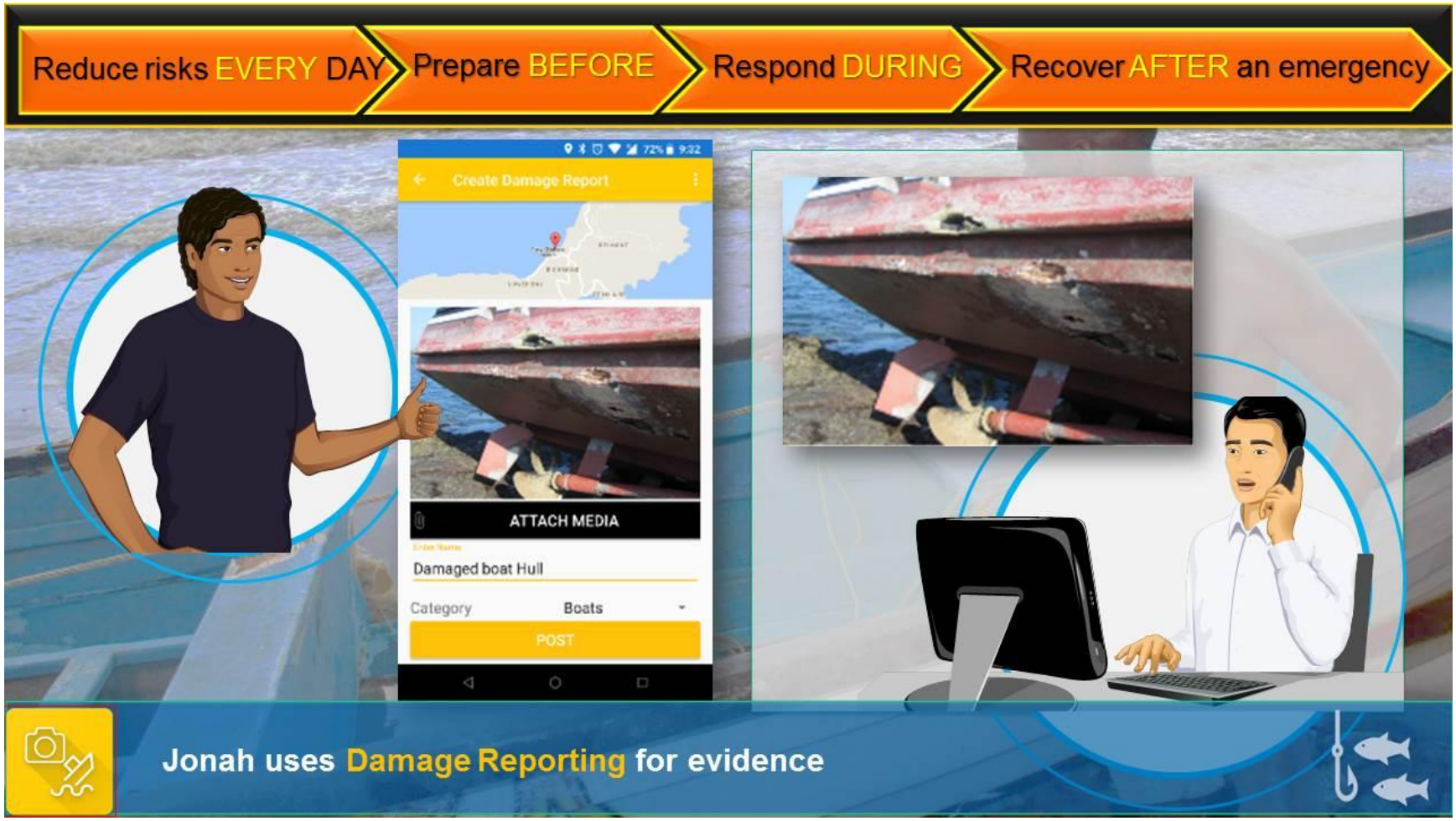

Reduce risks EVERY DAY
Prepare BEFORE
Respond DURING an emergency
My boat took in water!
I needed to call or radio the Coast Guard.
Emergency Contacts

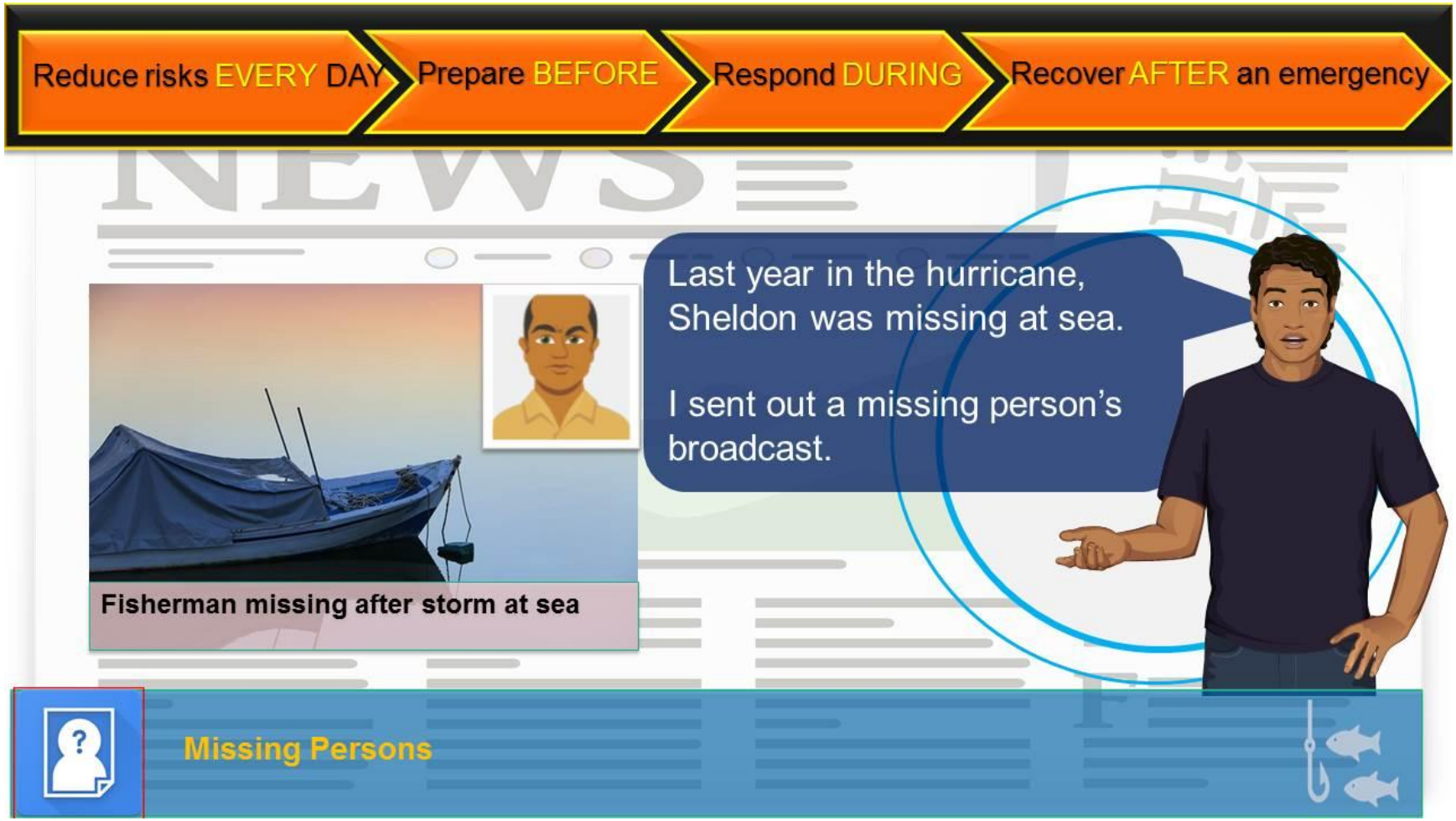

Reduce risks EVERY DAY
Prepare BEFORE
Respond DURING an emergency
Emergency Contacts
St Vincent and the Grenadines Red Cross Society
SVG Ambulance Service
SVG Coast Guard
Contact has additional information
St Vincent and the Grenadines
CHANGE COUNTRY
Dialling •••
795-0581
Add call
Extra volume
Bluetooth
Speaker
Keypad
Mute
Coast Guard is on the way, hope they get here soon!
Jonah uses Emergency Contacts in distress

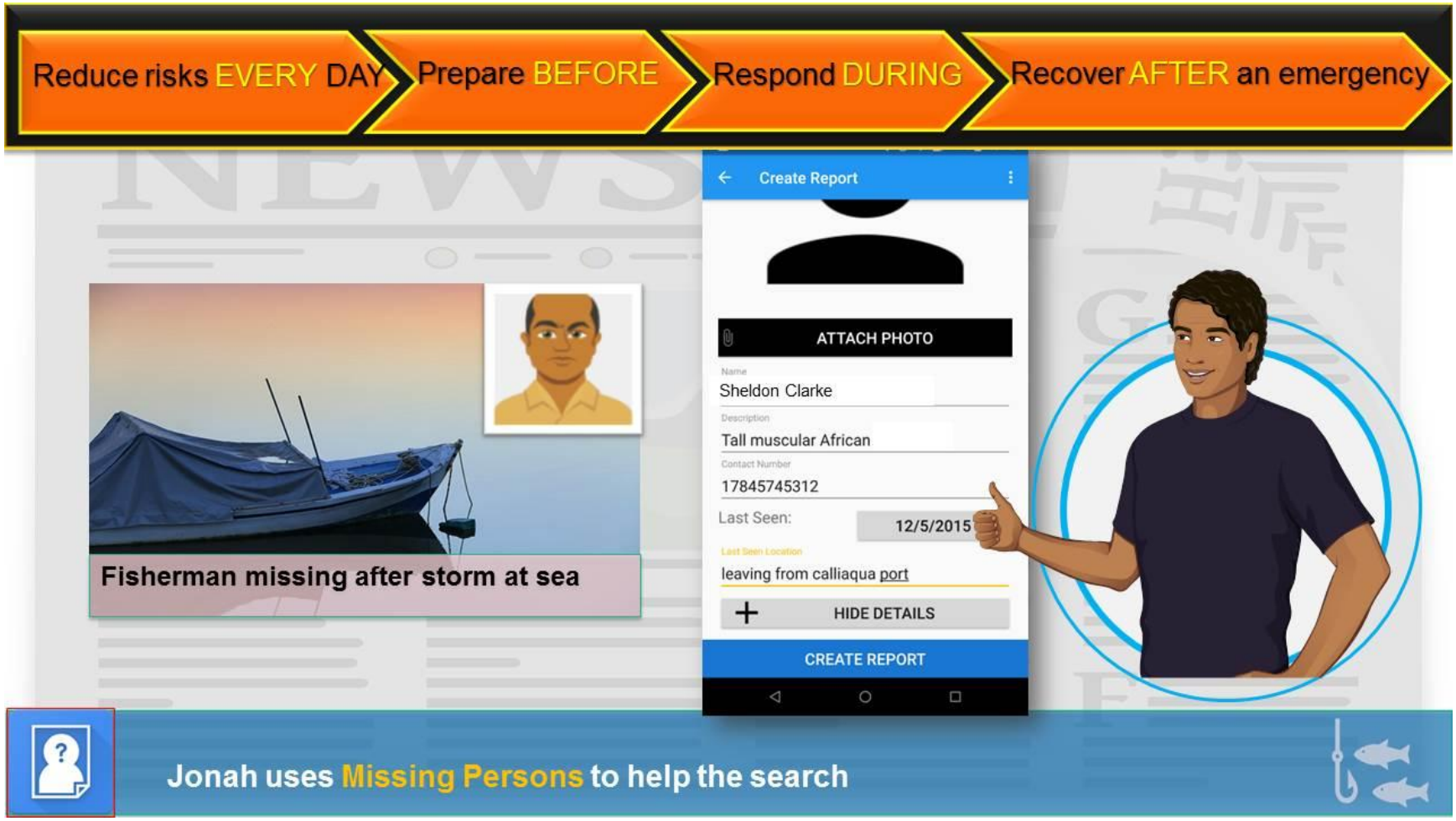

Reduce risks EVERY DAY
Prepare BEFORE
Respond DURING an emergency
What do I remember from the videos I looked at BEFORE I left?
Emergency Procedures
Emergency at Sea and Sailing
Navigation Lights
Pre Sea Check
Search And Rescue
Stability And Trim
Vhf Radio
0:08
1:26
Emergency Procedures


Reduce risks EVERY DAY
Prepare BEFORE
Respond DURING an emergency
The “Search & Rescue” video showed me how to signal for help.
I was ready for the Coast Guard!
Jonah performs Emergency Procedures


Reduce risks EVERY DAY
Prepare BEFORE
Respond DURING
Recover AFTER an emergency
Back on shore safely.
Relieved that it didn't turn out like last year when the boat got damaged in the hurricane.
Damage Reporting


Reduce risks EVERY DAY
Prepare BEFORE
Respond DURING
Recover AFTER an emergency
Create Damage Report
ATTACH MEDIA
Damaged boat Hull
Category
Boats
POST
Jonah uses Damage Reporting for evidence


Reduce risks EVERY DAY
Prepare BEFORE
Respond DURING
Recover AFTER an emergency
Fisherman missing after storm at sea
Last year in the hurricane, Sheldon was missing at sea.
I sent out a missing person's broadcast.
Missing Persons


Reduce risks EVERY DAY
Prepare BEFORE
Respond DURING
Recover AFTER an emergency
Fisherman missing after storm at sea
Create Report
ATTACH PHOTO
Name
Sheldon Clarke
Description
Tall muscular African
Contact Number
17845745312
Last Seen:
12/5/2015
Last Seen Location
leaving from calliaqua port
HIDE DETAILS
CREATE REPORT
Jonah uses Missing Persons to help the search

What can I do?	Which Module?	
Reduce risks EVERY DAY		LEK
		Messaging
Prepare BEFORE an emergency		Weather
		Alerts
Respond DURING an emergency		Emergency Contacts
		Emergency Procedures
Recover AFTER an emergency		Damage Reporting
		Missing Persons

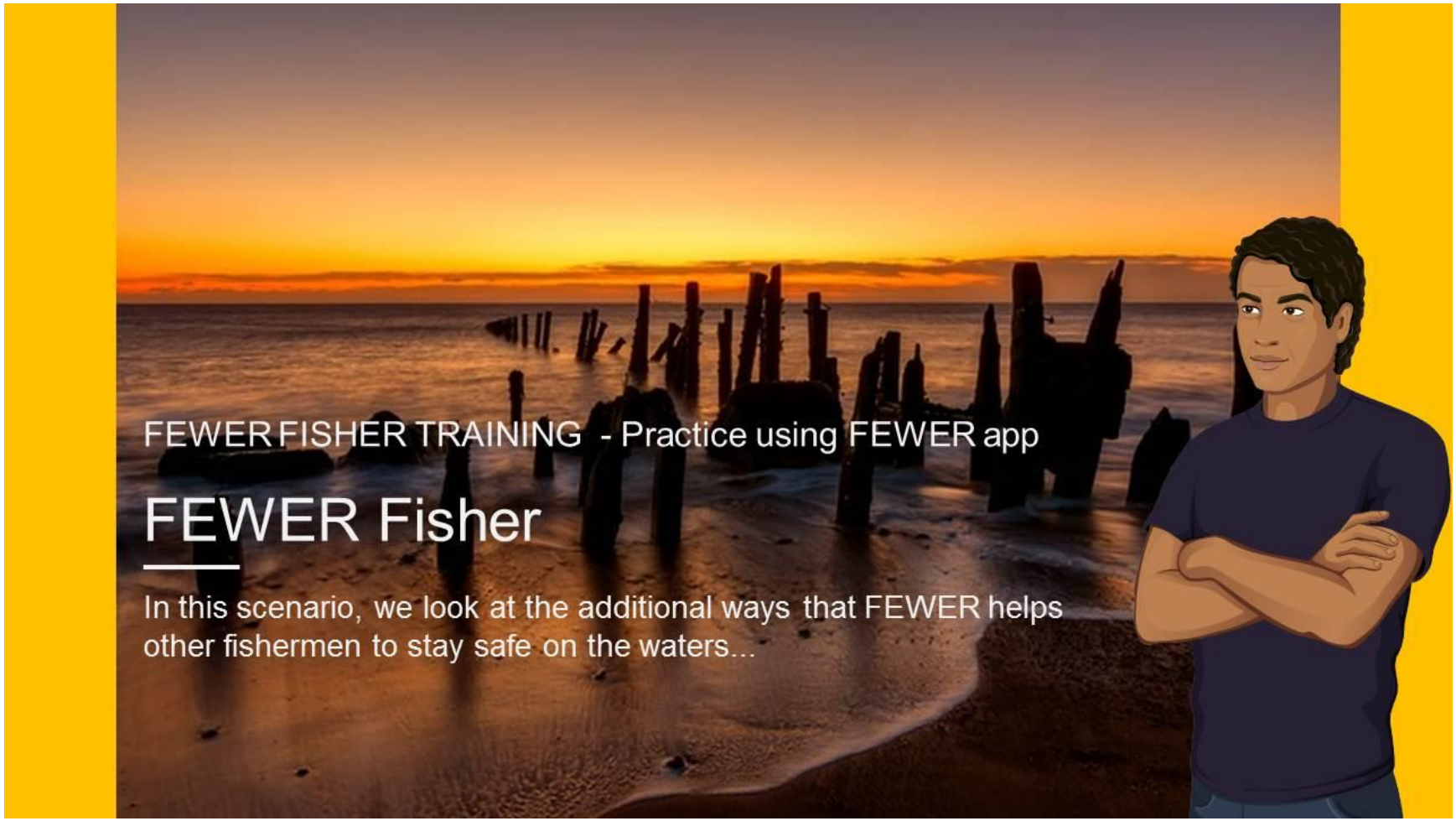

Keeping in Touch
Get help and keep in touch on the FEWER Fishers GND Whatsapp group:
https://tinyurl.com/fewerGND.
See FEWER Manual:
https://tinyurl.com/FEWERfisherHelp
PDF

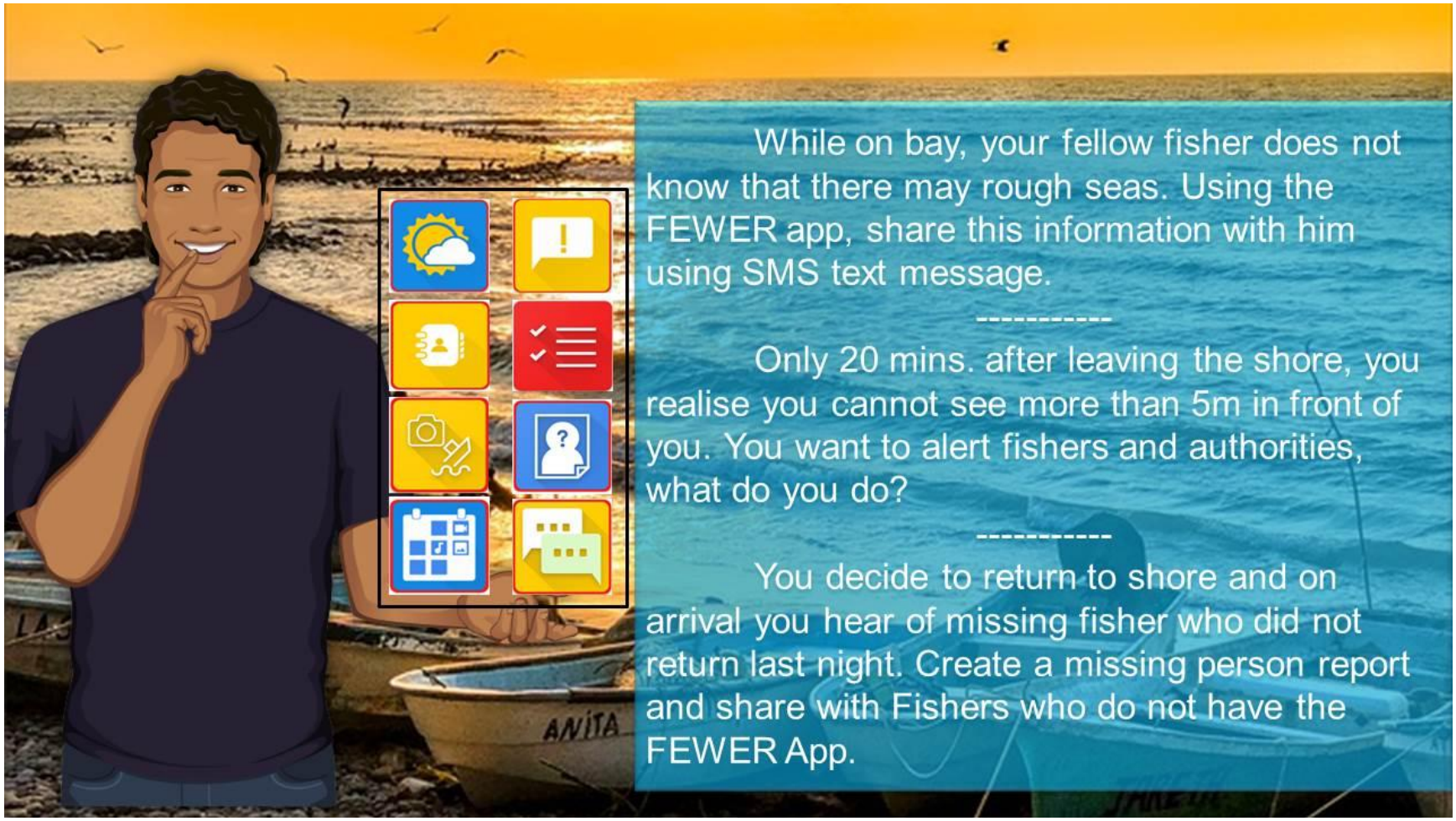

FEWER
Settings
Register for SMS Alerts
About FEWER
Help
Welcome Mikkel
LOGOUT


Help
Need help? Get support from the FEWER network through whatsapp or get answers to common questions in the FEWER Fishers Manual:
FEWER Fishers Whatsapp Group
FEWER Fishers Manual


Fisheries Early Warning & Emergency Response
Reduce risks EVERY DAY
Prepare BEFORE
Respond DURING
Recover AFTER an emergency
End of Scenario

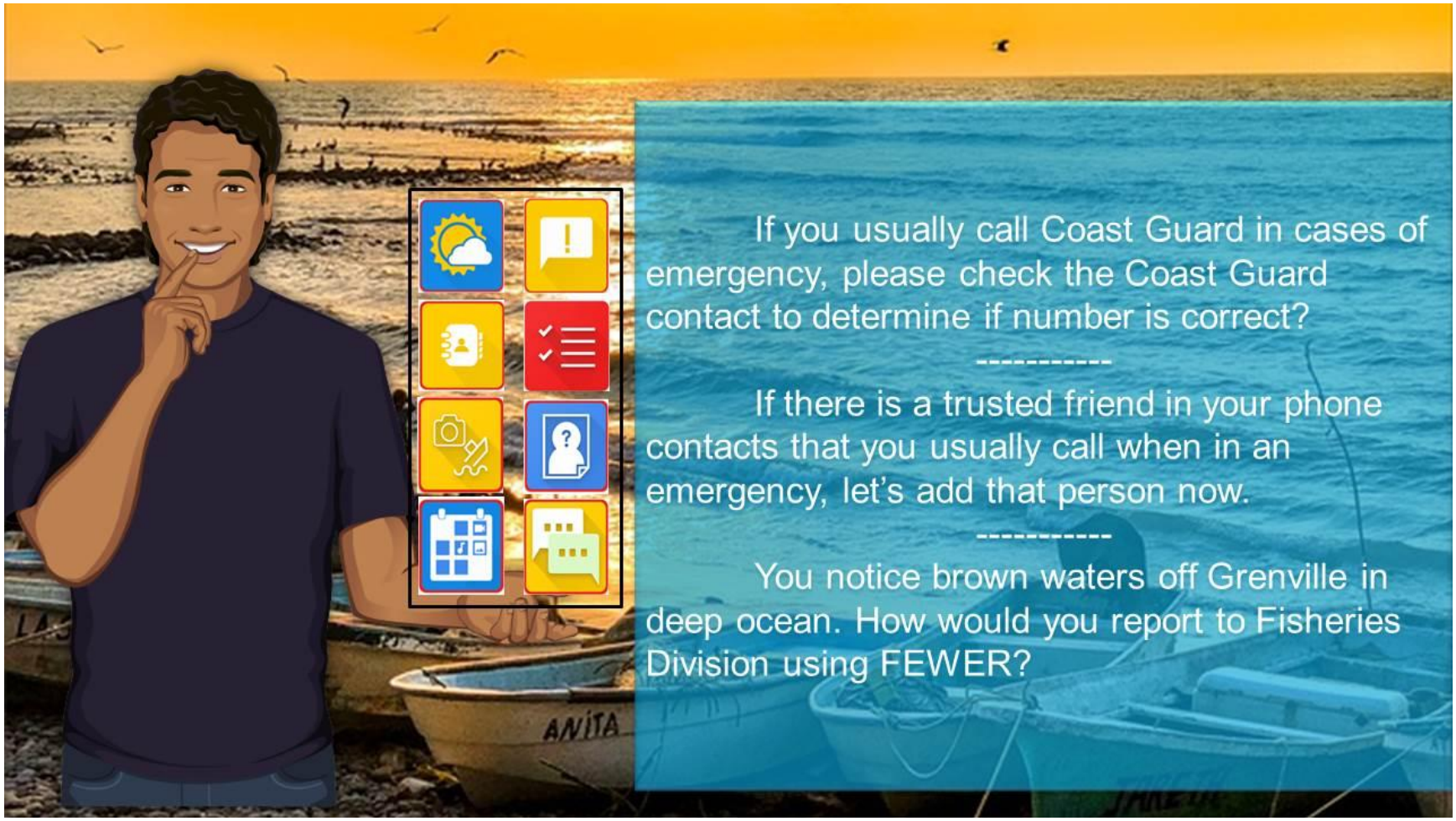
Appendix B.13. Practice using FEWER Application




While on bay, your fellow fisher does not know that there may rough seas. Using the FEWER app, share this information with him using SMS text message.

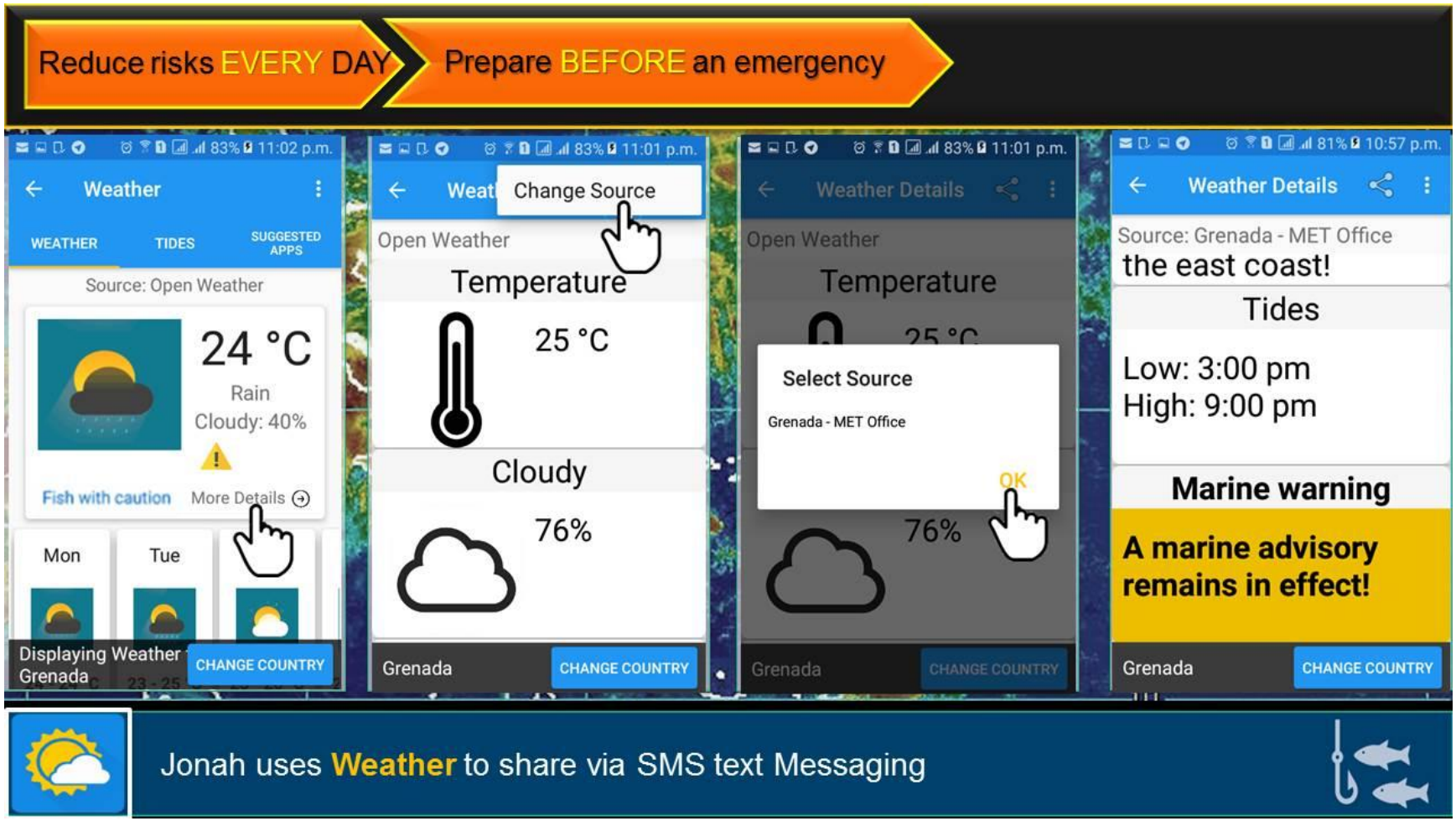
Only 20 mins. after leaving the shore, you realise you cannot see more than 5m in front of you. You want to alert fishers and authorities, what do you do?

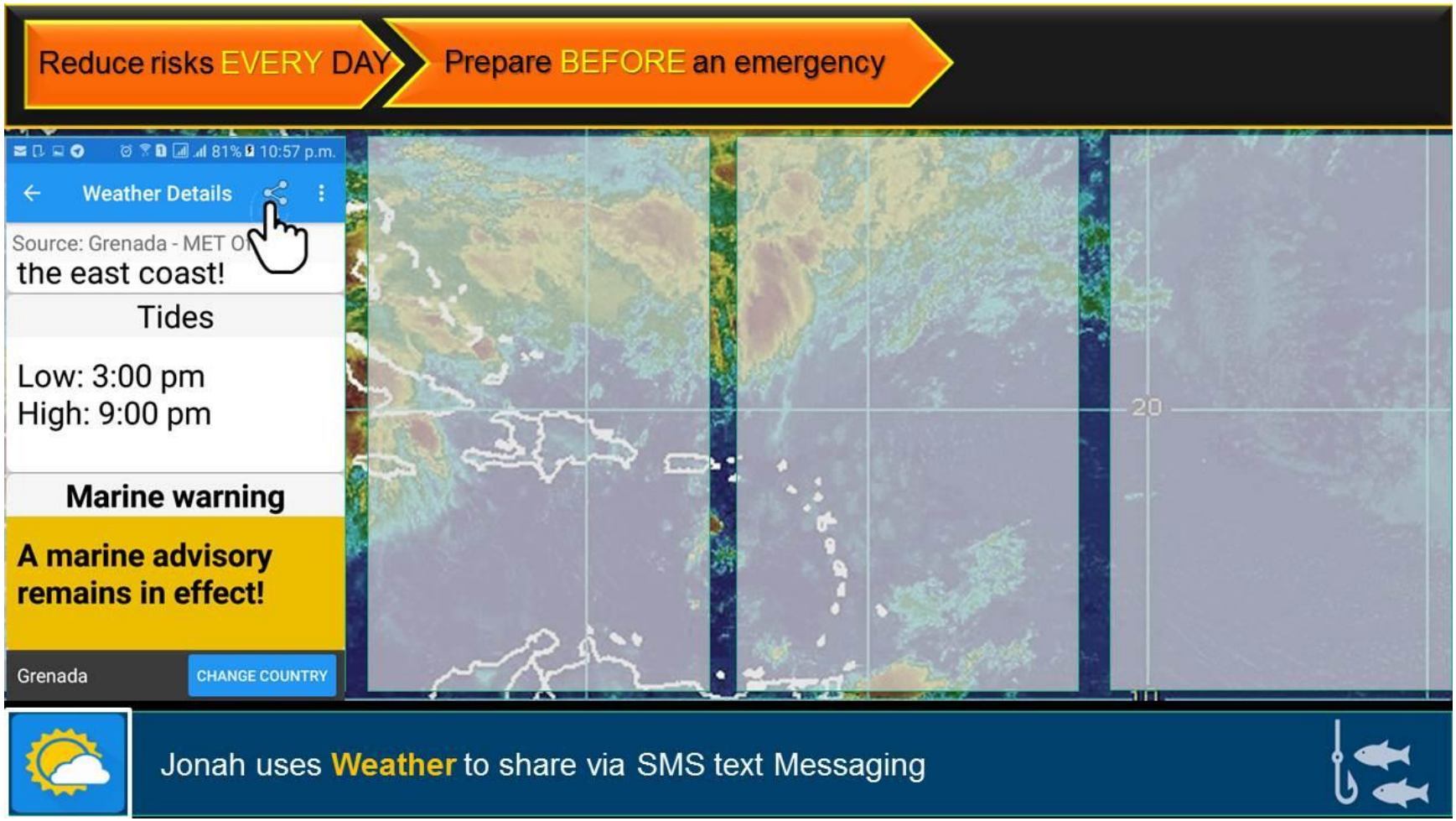
You decide to return to shore and on arrival you hear of missing fisher who did not return last night. Create a missing person report and share with Fishers who do not have the FEWER App.
ANITA

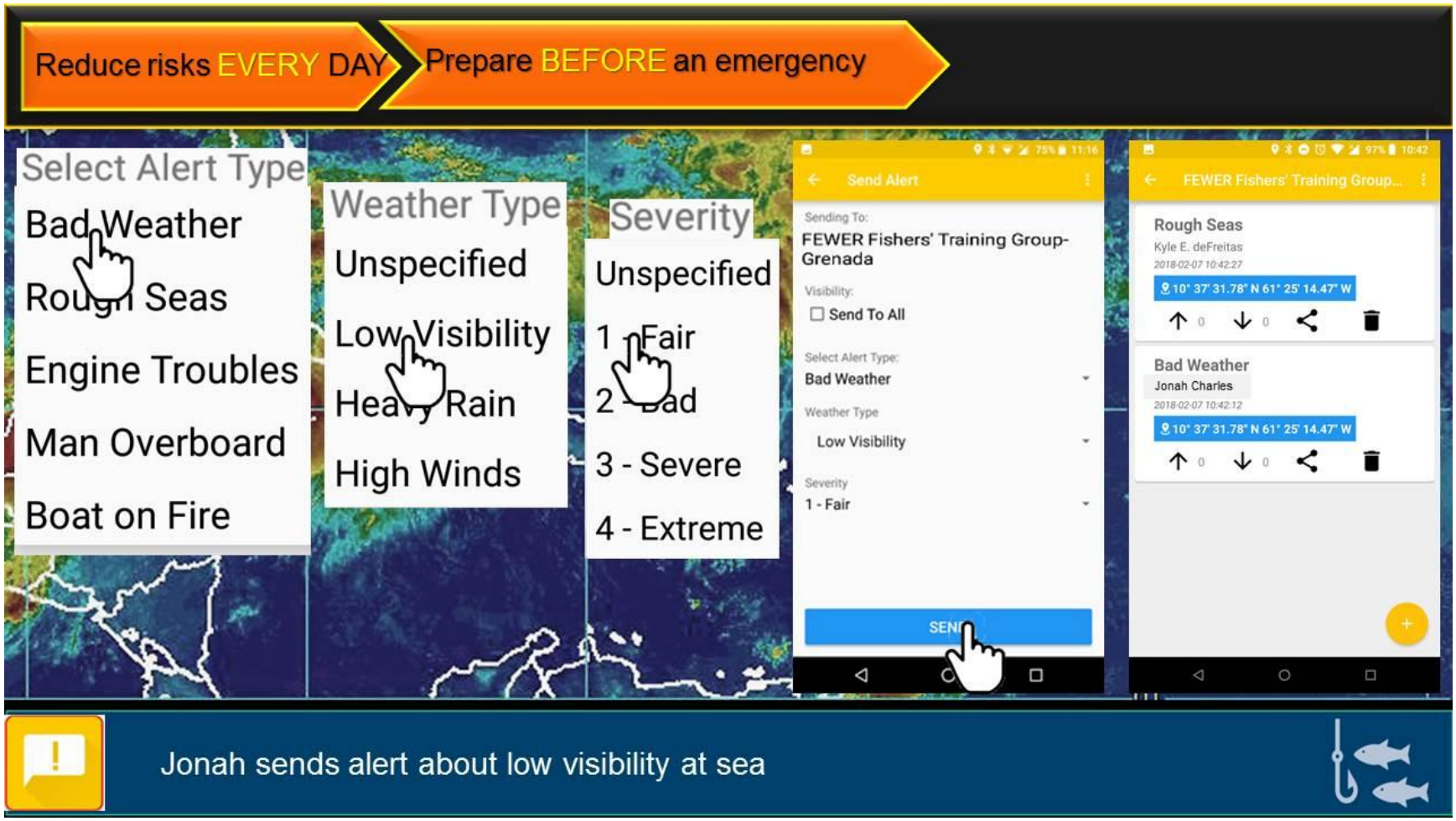

If you usually call Coast Guard in cases of emergency, please check the Coast Guard contact to determine if number is correct?

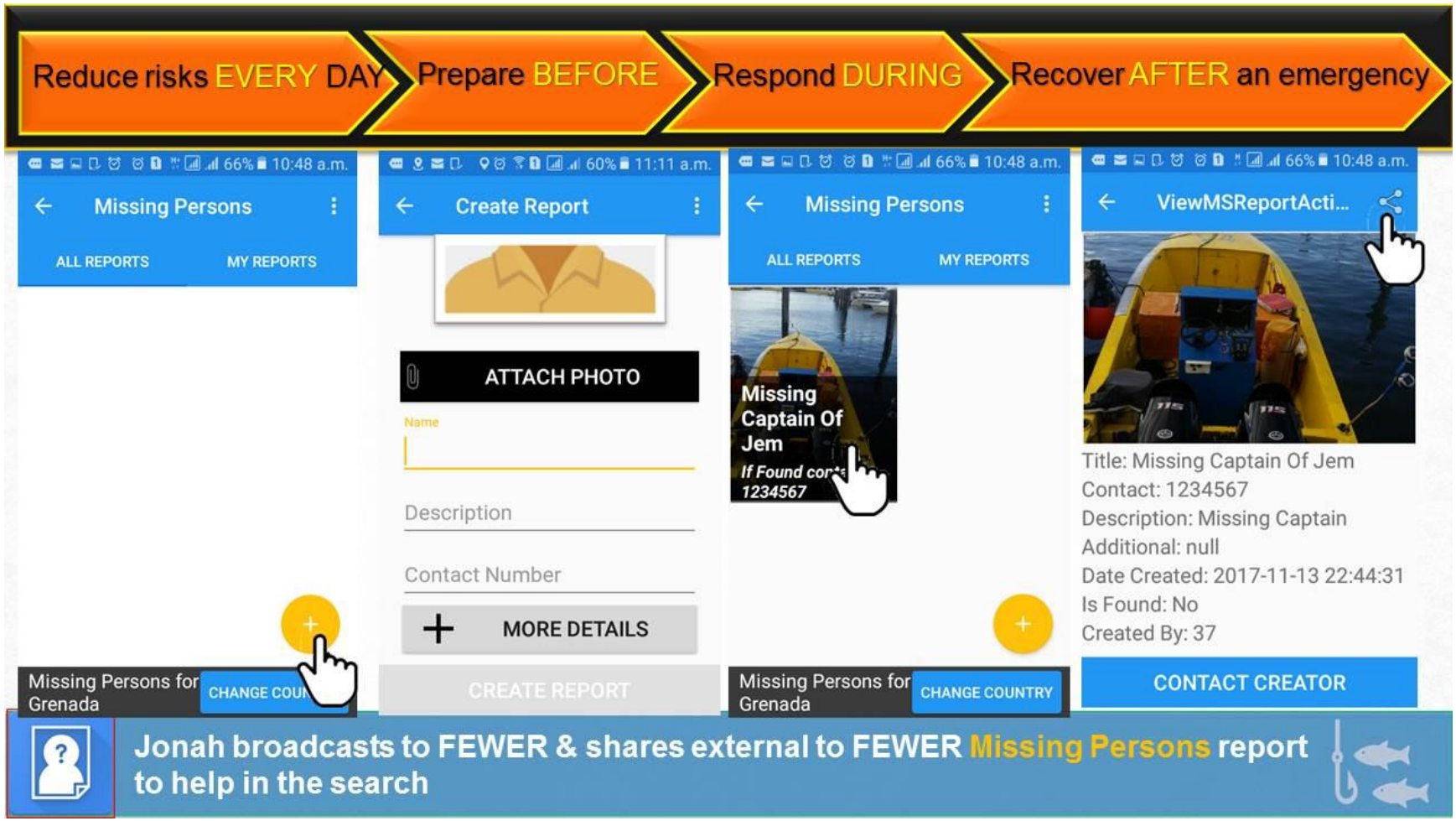
If there is a trusted friend in your phone contacts that you usually call when in an emergency, let's add that person now.

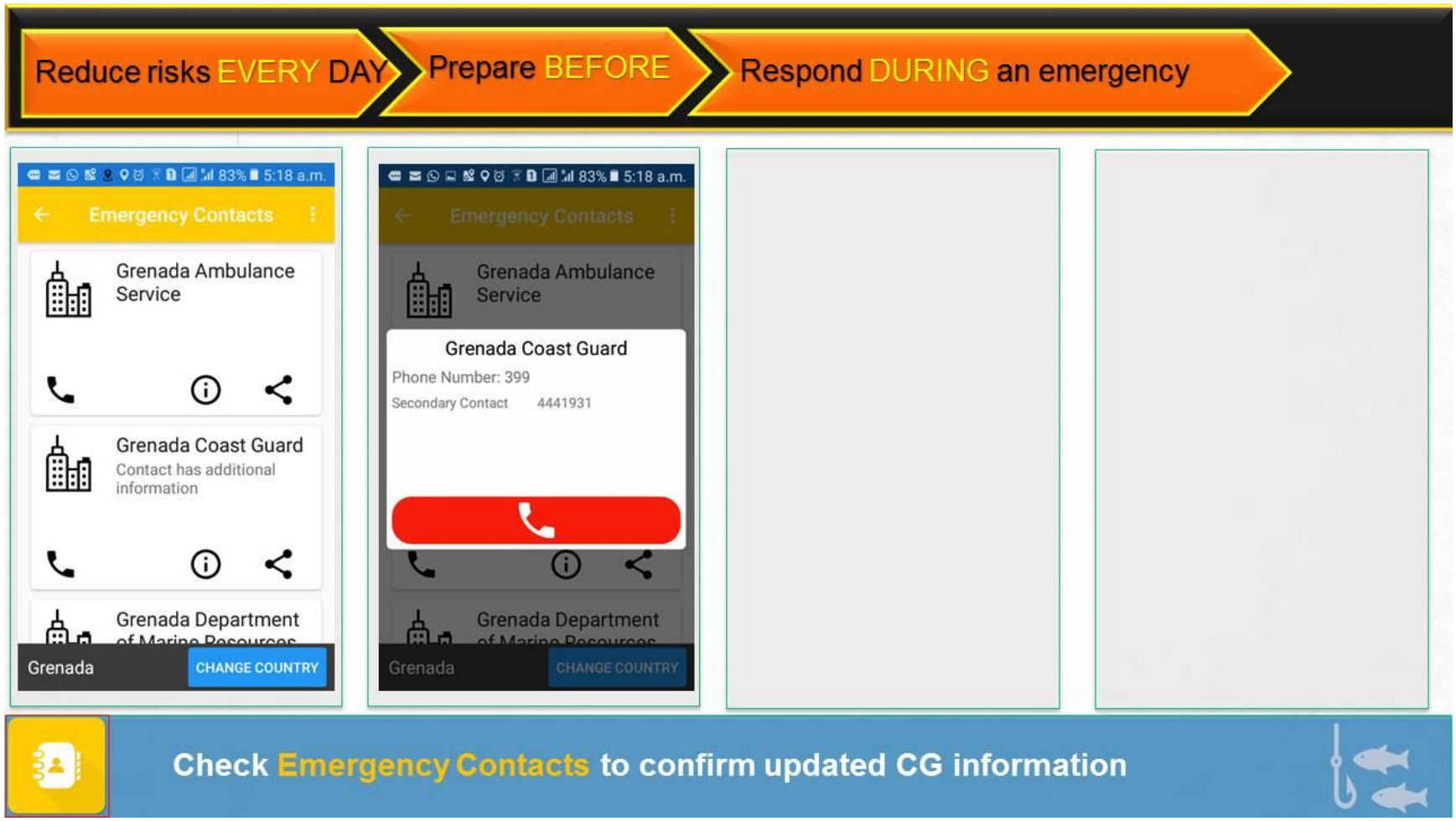
You notice brown waters off Grenville in deep ocean. How would you report to Fisheries Division using FEWER?
ANITA

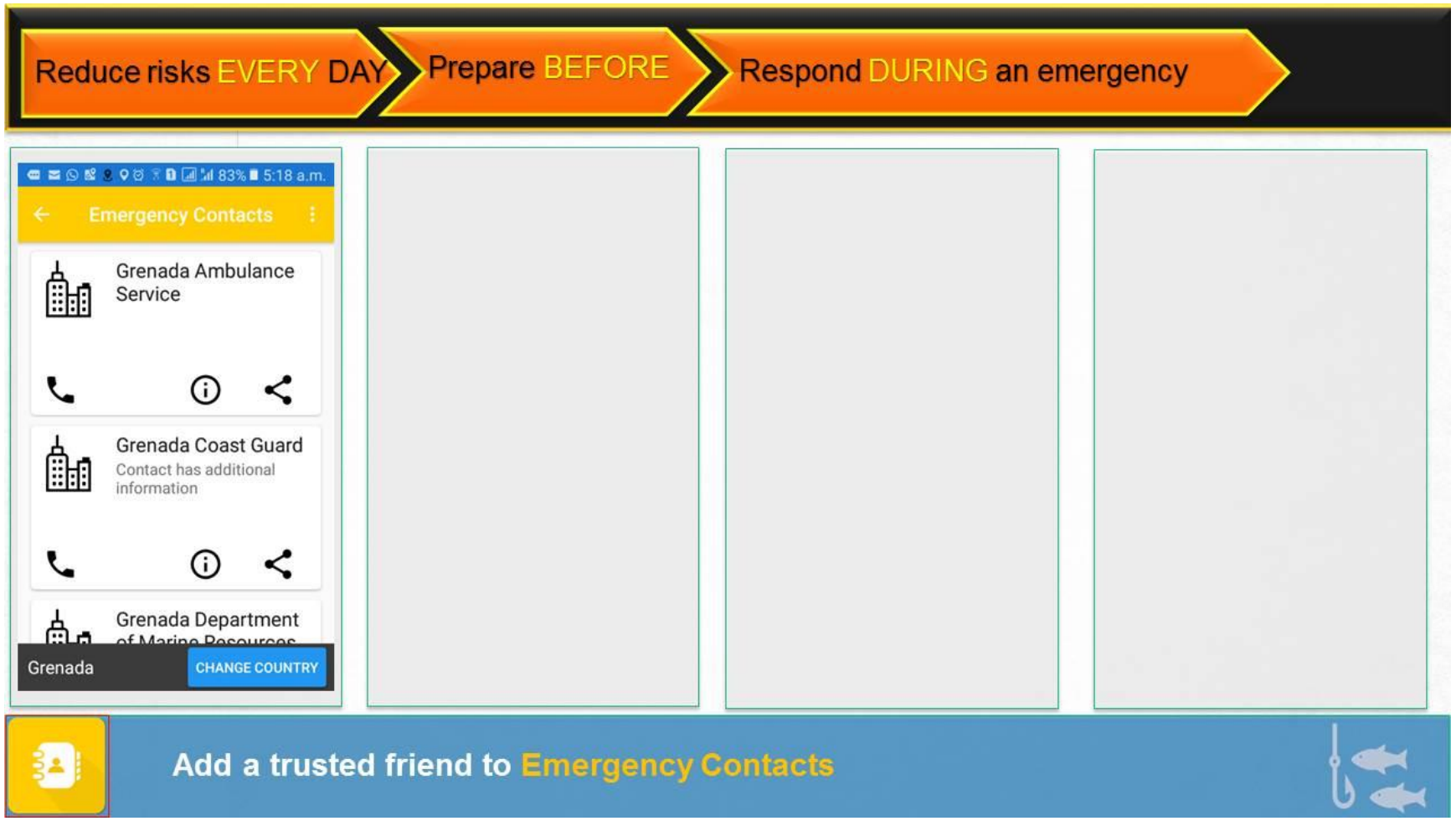

Reduce risks EVERY DAY
Prepare BEFORE an emergency
Weather
WEATHER
TIDES
SUGGESTED APPS
Source: Open Weather
24 °C
Rain
Cloudy: 40%
Fish with caution
More Details
Mon
Tue
Displaying Weather
Grenada
CHANGE COUNTRY
Change Source
Open Weather
Temperature
25 °C
Cloudy
76%
Grenada
CHANGE COUNTRY
Weather Details
Select Source
Grenada - MET Office
OK
Source: Grenada - MET Office
the east coast!
Tides
Low: 3:00 pm
High: 9:00 pm
Marine warning
A marine advisory remains in effect!
Jonah uses Weather to share via SMS text Messaging

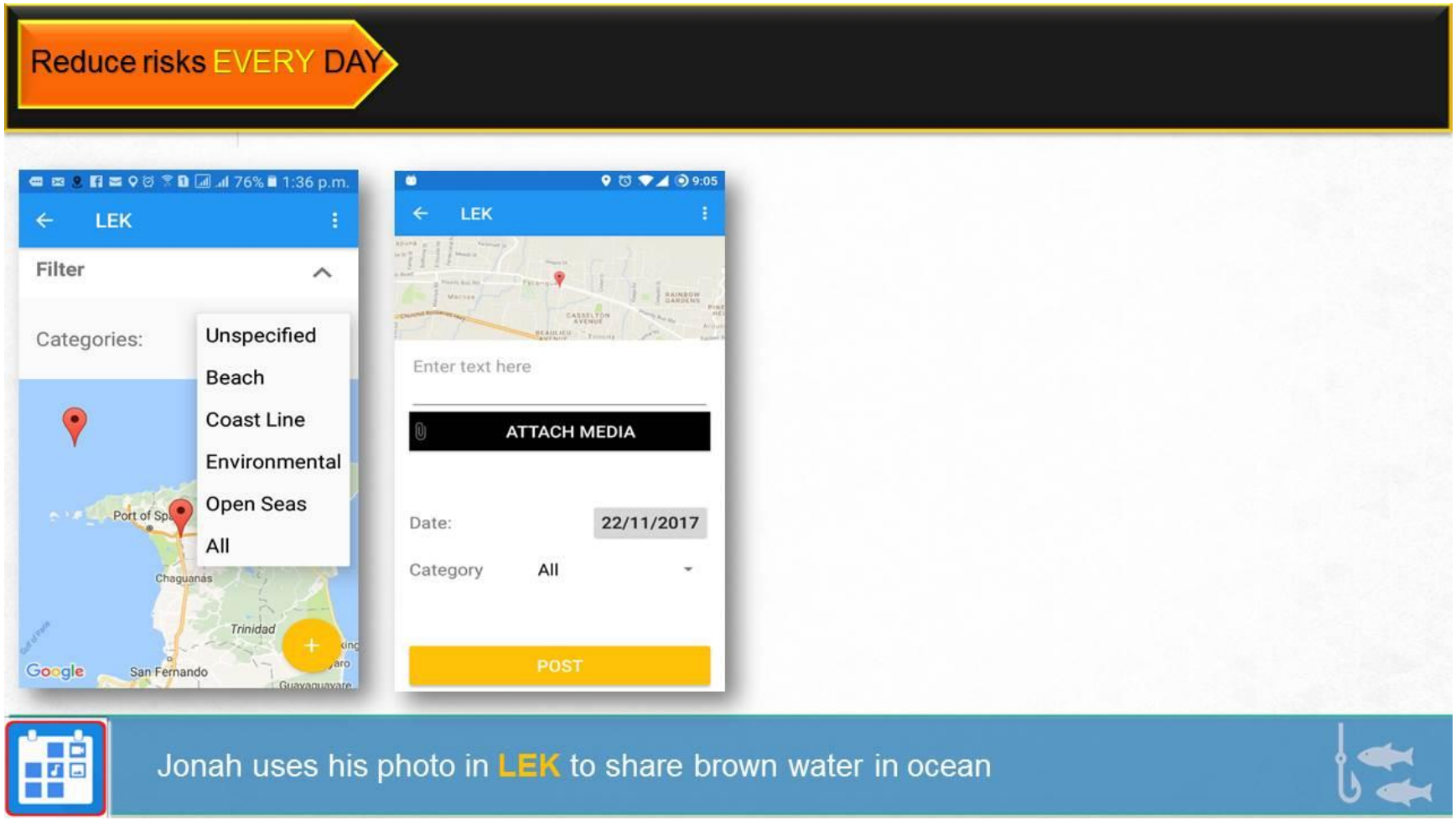

Reduce risks EVERY DAY
Prepare BEFORE an emergency
81% 10:57 p.m.
Weather Details
Source: Grenada - MET O
the east coast!
Tides
Low: 3:00 pm
High: 9:00 pm
Marine warning
A marine advisory remains in effect!
Grenada
CHANGE COUNTRY
20
Jonah uses Weather to share via SMS text Messaging


Reduce risks EVERY DAY
Prepare BEFORE an emergency
Select Alert Type
Bad Weather
Rough Seas
Engine Troubles
Man Overboard
Boat on Fire
Weather Type
Unspecified
Low Visibility
Heavy Rain
High Winds
Severity
Unspecified
1 - Fair
2 - Bad
3 - Severe
4 - Extreme
Send Alert
Sending To:
FEWER Fishers' Training Group-Grenada
Visibility:
Send To All
Select Alert Type:
Bad Weather
Weather Type
Low Visibility
Severity
1 - Fair
SEND
FEWER Fishers' Training Group...
Rough Seas
Kyle E. deFreitas
2018-02-07 10:42:27
10° 37' 31.78" N 61° 25' 14.47" W
Bad Weather
Jonah Charles
2018-02-07 10:42:12
10° 37' 31.78" N 61° 25' 14.47" W
Jonah sends alert about low visibility at sea


Reduce risks EVERY DAY
Prepare BEFORE
Respond DURING
Recover AFTER an emergency
Missing Persons
ALL REPORTS
MY REPORTS
Missing Persons for Grenada
CHANGE COUNTRY
Create Report
ATTACH PHOTO
Name
Description
Contact Number
MORE DETAILS
CREATE REPORT
Missing Captain Of Jem
1234567
ViewMSReportActi...
Title: Missing Captain Of Jem
Contact: 1234567
Description: Missing Captain
Additional: null
Date Created: 2017-11-13 22:44:31
Is Found: No
Created By: 37
CONTACT CREATOR
Jonah broadcasts to FEWER & shares external to FEWER Missing Persons report to help in the search


Reduce risks EVERY DAY
Prepare BEFORE
Respond DURING an emergency
83% 5:18 a.m.
Emergency Contacts
Grenada Ambulance Service
Grenada Coast Guard
Contact has additional information
Grenada Department
Grenada
CHANGE COUNTRY
83% 5:18 a.m.
Emergency Contacts
Grenada Ambulance Service
Grenada Coast Guard
Phone Number: 399
Secondary Contact 4441931
Grenada Department
Grenada
CHANGE COUNTRY
Check Emergency Contacts to confirm updated CG information


Reduce risks EVERY DAY
Prepare BEFORE
Respond DURING an emergency
83% 5:18 a.m.
Emergency Contacts
Grenada Ambulance Service
Grenada Coast Guard
Contact has additional information
Grenada Department
Grenada
CHANGE COUNTRY
Add a trusted friend to Emergency Contacts


Reduce risks EVERY DAY
LEK
Filter
Categories:
Unspecified
Beach
Coast Line
Environmental
Open Seas
All
Chaguanas
Trinidad
San Fernando
Google
LEK
Enter text here
ATTACH MEDIA
Date:
22/11/2017
Category
All
POST
Jonah uses his photo in LEK to share brown water in ocean

Appendix B.14. Practical Tips on Mobile Phones

Tips included:

1. Reduce screen brightness when phone not in use or indoors
2. Turn off WiFi when at sea (no WiFi in the ocean)
3. Save pictures when space needed to delete file by sending email to yourself
4. Data Saver in to save money (varies significantly between phones)
5. Delete WhatsApp pictures/videos manually

Appendix B.15. Evaluation

Tick the box

How were these aspects of the **workshop?**	Very good 😍	Good ☺	Acceptable 😐	Not good 😕	Terrible ☹
1. FEWER training					
2. mobile phone tips					
3. trainers					
4. venue					
5. refreshments					

Select YES or NO

Your understanding is that **FEWER**:		**Yes**	**No**
1.	meets all fishers' needs in bad weather or at sea		
2.	reduces risks from bad weather at sea		
3.	operates with national systems that help keep fishers safe		
4.	works fully on all mobile devices that fishers use at sea or on land		
5.	needs cell service or WiFi to send or receive information		

Match **icon** to its **module**

Icon	Module	
	LEK	*Every day, record things to reduce risk at sea*
	Messaging	*Every day, keep in touch with others for safety*
	Weather	*Every day check weather and if it's bad, share*
	Alerts	*When an emergency is coming, send alerts*
	Emergency Contacts	*In emergencies use up-to-date emergency contacts*
	Emergency Procedures	*In emergencies know what to do*
	Damage Reporting	*When you suffer losses or damage, create a report*
	Missing Persons	*When a fisher goes missing, broadcast to help recover*


Keeping in Touch
Get help and keep in touch on the FEWER Fishers GND Whatsapp group:
https://tinyurl.com/fewerGND.
See FEWER Manual:
https://tinyurl.com/FEWERfisherHelp
PDF


FEWER
Settings
Register for SMS Alerts
About FEWER
Help
Welcome Mikkel
LOGOUT


Help
Need help? Get support from the FEWER network through whatsapp or get answers to common questions in the FEWER Fishers Manual:
FEWER Fishers Whatsapp Group
FEWER Fishers Manual

Thank You!


UWI


CRFM
Caribbean Regional Fisheries Mechanism


PPCR


CIF
CLIMATE
INVESTMENT
FUNDS


IDB
Inter-American
Development Bank

Appendix C. Participant Lists

Table 23, Table 24, Table 25, Table 26, Table 27 and Table 28 provide a list of all the participants of the face to face training workshops held in each of the following countries:

1. Grenada
2. Saint Lucia
3. St. Vincent and the Grenadines

Appendix C.1. Grenada Participant Lists

Table 23 Administrators' Training Workshop Participants in Grenada

No.	NAME	ORGNIZATION
1.	Jerry Lewis	National Disaster Management Agency (NaDMA)
2.	Wendell Neckles	Coast Guard
3.	Milton Edwards	Coast Guard
4.	Nydana Joseph	Gouyave Fish Market
5.	Fimber Frank	Met Office
6.	Nigel Paul	Fisheries/ Grenville
7.	Cecil Marquez	Gouyave Fishermen Cooperative
8.	Thorne Joseph	Melville Street Fish Market
9.	Francis Calliste	Fisheries Division
10.	Aldwyn Ferguson	Gouyave Fishermen Cooperative
11.	Olando Harvey	Fisheries Division
12.	Roxanne Bonaparte	NADMA
13.	Kendly Frederick	Ministry of ICT
14.	Crafton Isaac	Fisheries Division
15.	Lisa Chetram	Fisheries Division
16.	Tabia Paul	Victoria Fish Market

Table 24 Fishers' Training Workshop Participants in Grenada

	Name	Coastal community (from where nominee operates)
1.	Cecil Marquez	St. John's
2.	Barry Alexis	St. John's
3.	Sean Walker	St. John's
4.	Tylon Joseph	St. John's
5.	Michael Benjamin	St. John's
6.	Aldwyn Ferguson	St. John's
7.	Joshua Clement	Carriacou

8.	Kasha Walker	Petite Martinique
9.	Craig Alexander	St. Patricks
10.	Christopher St. John	St. Patricks
11.	Akkel John	St. Patricks
12.	Rowmel Fletcher	St. Marks
13.	Carlson Edwards	St. Marks
14.	Kenrick Phillip	St. Marks
15.	Learie Thomas	St. Andrews
16.	Royan Isaac	St. Andrews
17.	Lyndon Marrast	St. Andrews
18.	Dave George	St. Andrews
19.	Donald Henry	St. Andrews
20.	Roy Ruffin	St. Georges
21.	Gilbert De Roche	St. Georges
22.	Marcus Edwards	St. Georges
23.	Luis Acosta	St. Georges
24. *	Kimmon Charles	St. John's
25. *	Elon Jerome	St. Mark's

** - Indicates the public users who did not have an Android phone required to execute the mobile application*

Appendix C.2. Saint Lucia Participant Lists

Table 25 Administrators' Training Workshop Participants in Saint Lucia

No.	NAME	ORGNIZATION
1.	Yvonne Edwin	Department of Fisheries
2.	Maria Medard	NEMO
3.	Ricardo George	Ministry of Agriculture (Information Systems Manager)
4.	Onella Zephrin	Department of Fisheries
5.	Alva Lynch	Castries Fisher-folk Cooperative Society LTD
6.	Mario Chicot	Royal Marine Police Unit (Constable)

7.	Avlon Charlery	Meteorological Services
8.	Luther Tyson	Water Resources Management Agency (IT Personnel)
9.	Velda Joseph	NEMO
10.	Charlie Prosper	Department of Fisheries
11.	Cherian Leon	Department of Fisheries
12.	Lionel Ellis	NEMO
13.	Hardin Jn Pierre	Department of Fisheries
14.	Horace Walters	Castries Fisher-folk Cooperative Society LTD
15.	Finley Leonce	Marine Police Unit (Commander)

Table 26 Fishers' Training Workshop Participants in Saint Lucia

	First Name and Last Name (PRINT clearly)	Fisher/Other	Coastal community (from where nominee operates)
1.	Ian Plummer	Fisher	Castries
2.	Francis Mitchel	Fisher	Choiseul
3.	Felix Epiphane	Fisher	Choiseul
4.	Kerwin Albert	Fisher	Choiseul
5. *	Felix Vaudroque	Fisher	Choiseul
6.	Devon Stephen	Fisher	Choiseul
7.	Lydia Labadie	Data collector	Castries
8.	Alva Lynch	Manager of cooperative	Castries
9.	Jose Fontenelle	Data Unit	Castries
10.	Shepherd Joseph	Extension Officer	South/ Dennery – Micoud
11.	Luvina St. Brice Simeon	Data collector	Vieux Fort
12.	Trevor La Force	Fisher	Castries
13.	Charles Sylvestre	Fisher	Castries
14.	Christopher St. Prix	Fisher	Castries
15.	Ignatius James	Data collector	Labarie
16.	Hardin Jn Pierre	Extension Officer	
17.	Ian Joseph	Fisher/Monger (a fish cleaner)	Gros Islet
18.	Adrian Louisy	Fisher	Vieux Fort

** - Indicates the public users who did not have an Android phone required to execute the mobile application*

Appendix C.3. St. Vincent and the Grenadines Participant Lists

Table 27 Administrators' Training Workshop Participants in St. Vincent and the Grenadines

	NAME	ORGNIZATION
1.	Billy Jeffers	Meteorological Services
2.	Joe Dublin	Calfico
3.	Oronde Lambert	CEDMA
4.	Jillianjoy Davis	Maritime Administration
5.	Susan Singh – Renton	CRFM Secretariat
6.	Ernie Bracken	Fisheries Division
7.	Valcina Candy Stoute	Fisheries Division Dominica
8.	Marshall Alexander	Dominica Meteorological Services
9.	Gail Hoad	PPCR UWI MORI, Jamaica
10.	Ainsley Henry	PPCR UWI MORI, Jamaica
11.	Horace Walters	CNFO / St. Lucia Fisher-folk
12.	Lorenzo George	Fisheries Division
13.	Kenlet Francis	SVG Coast Guard
14.	Cedric Van Meerbeeck	CIMH
15.	Winsbert Harry	Goodwill Fisherman Co-op & N.F.O
16.	Melita Browne	SVG Coast Guard Service
17.	June Masters	CRFM
18.	Roberto Holder	Communication Information Unit Agriculture
19.	Luke Fraser	Communication Information Unit Agriculture
20.	Jaeson Bowens	NEMO
21.	Jerwayne Laidlow	NEMO
22.	Annille Beache	Ministry of Tourism, Sports and Culture
23.	Deroy Ferdinand	Ministry of Health Wellness and the Environment
24.	Ronick Jacobs	Fisheries Division
25.	Paul Robertson	Fisheries Division
26.	Jennifer	Fisheries Division (CFO)

Table 28 Fishers' Training Workshop Participants in St. Vincent and the Grenadines

	First Name and Last Name (PRINT clearly)	Fisher/Other	Coastal community (from where nominee operates)
1.	Winston Hazlewood	Teacher by profession / PR for CNFO / Vice Pres Barrouallie Cooperative	Barrouallie
2.	Oscar Richardson	Fisher	Barrouallie
3.	Rolanzo Bynoe	Fisher / Diver	Bequia
4.	Raoul Lewis	Fisher / Boat owner	Callaquia
5.	Kendol Providence	Fisher	Clare Valley
6.	Kemuel Frederick	Fisher	Barrouallie
7.	Winsbert Harry	Fisher	Rose Place
8.	Julian Fairbarin	Fisher / Boat owner	Rose Place
9.	Joe Harry	Fisher	Rose Place
10.	Peter Regis	Fisher	Union Island
11.	Rueben Bradshaw	Fisher	Callaquia
12.	Joseph Bobb	Fisher / Boat owner	Rose Place
13.	Nigel Gibson	Fisher	Barrouallie
14.	Ashwa Stewart	Fisher / Boat owner	Kingstown
15.	Keswin Mcfee	Fisher	Callaquia
16.	Jose Clarke	Fisher	Lower Bay St
17.	Eldon O'Garro	Boat owner	Rose Place
18.	Joseph Cruickshank	Fisher	Rose Place
19.	Phillon Joseph	Fisher	Clare Valley
20.	Javan Ellis	Fisher	Canoun

Appendix D. FEWER Training Workshop Evaluations Forms

Appendix D.1. FEWER Administrators' Training Workshop Evaluation Form

THANKS FOR JOINING US for FEWER ADMINISTRATOR TRAINING!

Country: Date:

FEWER role	Agency Admin: Met Office ☐ Disaster Management Agency ☐ Fisherfolk Organization ☐ Country Admin ☐ Coast Guard ☐ Technical Admin ☐ Regional Admin ☐ Other ☐

---------- PLEASE RATE THE WORKSHOP

You found that:	Strongly agree 😍	Agree ☺	Neutral 😐	Disagree ☹	Strongly disagree ☹
1. The objectives of the workshop were clear					
2. The content and detail were appropriate					
3. Scenarios were relevant to your role in FEWER					
4. The hands-on activities helped consolidate understanding of FEWER and its operations					
5. The trainers were effective					
6. The venue was suitable					
7. Break and lunch catering were adequate					

---------- PLEASE LET US KNOW WHAT YOU TOOK AWAY

FEWER is intended to:		**Yes**	**No**
1.	meet all fishers' EW & ER needs associated with weather and climate		
2.	reduce fishers' risks from weather- and climate-related hazards		
3.	operate within the national Disaster Risk Management framework		
4.	provide all capabilities on all mobile devices that fishers use at land and sea		

Which FEWER modules would be used to:							
1. upload a video on safety at sea for FEWER fishers							
2. broadcast to fishers that a threatening weather system has unexpectedly developed in the north							
3. update the phone number for the Coast Guard							
4. view marine artefacts recorded by fishers in 2018							
5. analyze the average cost of losses reported by fishers on account of last year's hurricanes							
6. alter the wave height threshold for FEWER to automatically indicate the need for fishers' caution							
7. prepare a report for the Minister on missing fishers rescued with the assistance of FEWER							

Appendix D.2. FEWER Fishers' Training Workshop Evaluation Form

THANKS FOR JOINING US for **FEWER FISHER TRAINING!**

Country: Date:

How were these aspects of the **workshop?**	Very good	Good	Acceptable	Not good	Terrible
1. FEWER training					
2. mobile phone tips					
3. trainers					
4. venue					
5. refreshments					

Your understanding is that **FEWER**:		**Yes**	**No**
1.	meets all fishers' needs in bad weather or at sea		
2.	reduces risks from bad weather at sea		
3.	operates with national systems that help keep fishers safe		
4.	works fully on all mobile devices that fishers use at sea or on land		
5.	needs cell service or WiFi to send or receive information		

Please draw lines from each FEWER **icon** to its **module** name		
Icon	**Module**	
	LEK	*Every day, record things to reduce risk at sea*
	Messaging	*Every day, keep in touch with others for safety*
	Weather	*Every day check weather and if it's bad, share*
	Alerts	*When an emergency is coming, send alerts*
	Emergency Contacts	*In emergencies use up-to-date emergency contacts*
	Emergency Procedures	*In emergencies know what to do*
	Damage Reporting	*When you suffer losses or damage, create a report*
	Missing Persons	*When a fisher goes missing, broadcast to help recover*

Appendix E. FEWER Training Workshop Evaluations Forms

Appendix E.1. FEWER Administrator Post-training Survey for St. Vincent and the Grenadines

FEWER Admin Post-training Exercise

* Required

ST. VINCENT and the GRENADINES

FEWER supports the work of several agencies by reducing fishers' vulnerability to weather and climate related hazards, and facilitating the sharing of local knowledge to inform climate-smart fisheries planning, management decision-making and risk management

FEWER will be integrated into existing national and regional disaster risk management, emergency response and fisheries management frameworks; and accordingly requires the incorporation of specific procedures into the regular operations of several agencies. As a representative of one such agency, you are asked to assess the proposed FEWER role of your organization. Your feedback will be used to finalize a Memorandum of Understanding to be established between key agencies which together, reduce fishers' vulnerability to weather and climate related hazards.

1. **Please select your organization's FEWER admin role:** *
Mark only one oval.

- ◯ Regional Admin: CRFM *Skip to question 2.*
- ◯ Regional Admin: CDEMA *Skip to question 12.*
- ◯ Regional Admin: CIMH *Skip to question 21.*
- ◯ Country Admin: Fisheries Authority *Skip to question 30.*
- ◯ Agency Admin: Disaster Management Agency *Skip to question 45.*
- ◯ Agency Admin: Met Office *Skip to question 60.*
- ◯ Agency Admin: Fisherfolk Organization *Skip to question 74.*
- ◯ Coast Guard *Skip to question 87.*
- ◯ Technical Admin *Skip to question 98.*
- ◯ Other: _____ *Skip to question 106.*

Regional Admin: CRFM

Please assess the relevance of each of the following responsibilities to your organization's role in FEWER administration. Please add comments in the "Other" field.

2. **1. Provide inputs into FEWER deployment, operation and updates**
Check all that apply.

- ☐ Yes
- ☐ No
- ☐ Other: _____

3. **2. Provide data and information for inclusion into FEWER**
Check all that apply.

- ☐ Yes
- ☐ No
- ☐ Other: _____

4. **3. Store historic events for later FEWER retrieval to preserve institutional memory**
Check all that apply.

- ☐ Yes
- ☐ No
- ☐ Other: _____

5. **4. Specify how value of risk knowledge can be increased by and for small-scale fishers**
   Check all that apply.
   - [ ] Yes
   - [ ] No
   - [ ] Other: _____

6. **5. Moderate alerts generated by FEWER mobile before broadcasting outside of communities**
   Check all that apply.
   - [ ] Yes
   - [ ] No
   - [ ] Other: _____

7. **6. Facilitate incorporating FEWER into sub-regional fisheries policies, plans, programmes and projects as appropriate**
   Check all that apply.
   - [ ] Yes
   - [ ] No
   - [ ] Other: _____

8. **7. Promote the integration of FEWER into EAF, CCA and DRM**
   Check all that apply.
   - [ ] Yes
   - [ ] No
   - [ ] Other: _____

9. **8. Assist national FEWER parties with transboundary networking to improve communication and capacity**
   Check all that apply.
   - [ ] Yes
   - [ ] No
   - [ ] Other: _____

10. **9. Develop the capacity to incorporate fishers local knowledge into climate-smart fisheries planning, management decision-making and risk management**
    Check all that apply.
    - [ ] Yes
    - [ ] No
    - [ ] Other: _____

11. **10. Other responsibilities**

_____

_____

_____

_____

_____

Skip to "Thanks for assessing your FEWER Admin role!."

Regional Admin: CDEMA

Please assess the relevance of each of the following responsibilities to your organization's role in FEWER administration. Please add comments in the "Other" field.

12. **1. Provide inputs into FEWER deployment, operation and updates**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

13. **2. Provide data and information for inclusion into FEWER**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

14. **3. Store historic events for later FEWER retrieval to preserve institutional memory**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

15. **4. Specify how value of risk knowledge can be increased by and for small-scale fishers**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

16. **5. Moderate alerts generated by FEWER mobile before broadcasting outside of communities**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

17. **6. Mobilise and coordinate disaster relief that incorporates FEWER**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

18. **7. Mitigate, via FEWER, the immediate consequences of disasters**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

19. **8. Provide reliable and comprehensive information on disasters as required to develop FEWER**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

20. **9. Other responsibilities**

_____

_____

_____

_____

_____

Skip to "Thanks for assessing your FEWER Admin role!."

Regional Admin: CIMH

Please assess the relevance of each of the following responsibilities to your organization's role in FEWER administration. Please add comments in the "Other" field.

21. **1. Provide inputs into FEWER deployment, operation and updates**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

22. **2. Provide data and information for inclusion into FEWER**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

23. **3. Store historic events for later FEWER retrieval to preserve institutional memory**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

24. **4. Specify how value of risk knowledge can be increased by and for small-scale fishers**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

25. **5. Moderate alerts generated by FEWER mobile before broadcasting outside of communities**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

26. **6. Assist in improving the meteorological and hydrological services in FEWER countries to use and develop FEWER**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

27. **7. Assist in promoting awareness of the benefits of services that serve and facilitate FEWER**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

28. **8. Provide training, research and investigations, and appropriate ICT services and advice to FEWER Parties**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

29. **9. Other responsibilities**

_____

_____

_____

_____

_____

Skip to "Thanks for assessing your FEWER Admin role!."

Country Admin: Fisheries Division

Please assess the relevance of each of the following responsibilities to your organization's role in FEWER administration. Please add comments in the "Other" field.

30. **1. Provide inputs into FEWER deployment, operation and updates**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

31. **2. Provide data and information for inclusion into FEWER**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

32. **3. Store historic events for later FEWER retrieval to preserve institutional memory**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

33. **4. Specify how value of risk knowledge can be increased by and for small-scale fishers**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

34. **5. Moderate alerts generated by FEWER mobile before broadcasting outside of communities**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

35. **6. Promote the integration of FEWER into EAF, CCA and DRM**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

36. **7. Provide fisheries data and information required by FEWER**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

37. **8. Include FEWER in fisheries extension services and training**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

38. **9. Develop the capacity to incorporate fishers local knowledge into climate-smart fisheries planning, management decision-making and risk management**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

39. **10. Provide support for fishers through FEWER stewards and champions**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

40. **11. Identify new sources of knowledge on climate and disaster risks and ensure they are configured in FEWER**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

41. **12. Collect FAD information through the local knowledge and peer-generated alerts on mobile client, as appropriate**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

42. **13. Include in training, situational learning that ties use of FEWER to its context and related tools such as PGIS**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

43. **14. Provide situational learning that ties use of FEWER to its context and related tools for inclusion in FEWER training materials**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

44. **15. Other responsibilities**

_____

_____

_____

_____

_____

Skip to "Thanks for assessing your FEWER Admin role!."

Agency Admin: Disaster Management Agency

Please assess the relevance of each of the following responsibilities to your organization's role in FEWER administration. Please add comments in the "Other" field.

45. **1. Specify how value of risk knowledge can be increased by and for small-scale fishers**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

46. **2. Incorporate the fisheries sector further into national MHEWS**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

47. **3. Endorse FEWER CAP templates for hazards at sea**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

48. **4. Integrate FEWER with national MHEWS including via CAP-compliance, testing, activation channels, contact Information and CAP alert templates for incidents at sea**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

49. **5. Moderate alerts generated by FEWER mobile before broadcasting outside of communities**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

50. **6. As a primary FEWER agency administrator, access the FEWER alerts feed, view FEWER alerts and activate its dissemination channels**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

51. **7. Lead the development and adaptation of FEWER as part of the national MHEWS, especially integrating it with CAP**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

52. **8. Provide inputs into FEWER deployment, operation and updates**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

53. **9. Provide data and information for inclusion into FEWER**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

54. **10. Store historic events for later FEWER retrieval to preserve institutional memory**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

55. **11. Conduct training and exercises to test FEWER functionality**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

56. **12. Provide situational content to include in FEWER training**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

57. **13. Provide chunked emergency preparation and response procedures to include in FEWER**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

58. **14. Include FEWER zero-rated messaging for emergency alerts and relief in existing and future negotiations with local telecommunication service providers**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

59. **15. Other responsibilities**

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Skip to "Thanks for assessing your FEWER Admin role!."

Agency Admin: Meteorological Service

Please assess the relevance of each of the following responsibilities to your organization's role in FEWER administration. Please add comments in the "Other" field.

60. **1. Provide inputs into FEWER deployment, operation and updates**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

61. **2. Provide data and information for inclusion into FEWER**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

62. **3. Store historic events for later FEWER retrieval to preserve institutional memory**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

63. **4. Specify how value of risk knowledge can be increased by and for small-scale fishers**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

64. **5. Moderate alerts generated by FEWER mobile before broadcasting outside of communities**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

65. **6. Continuously improve marine forecasting and now-casting**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

66. **7. Seek out new or improved marine data and climate services**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

67. **8. Configure hazard alerts for fishers via FEWER using CAP**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

68. **9. Improve the inputs to EWS from automated marine sensors**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

69. **10. Provide training in climate service interpretation for fishers**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

70. **11. Provide situational content to include in FEWER training**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

71. **12. Trial crowd-sourced alerts at sea to assess the value of supplementing marine forecasts with now-casts**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

72. **13. Specify, with prompt updates on change the URL and semantic format of weather information on the MET Office's website**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

73. **14. Other responsibilities**

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Skip to "Thanks for assessing your FEWER Admin role!."

Agency Admin: Fisherfolk Organization

Please assess the relevance of each of the following responsibilities to your organization's role in FEWER administration. Please add comments in the "Other" field.

74. **1. Provide inputs into FEWER deployment, operation and updates**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

75. **2. Provide data and information for inclusion into FEWER**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

76. **3. Store historic events for later FEWER retrieval to preserve institutional memory**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

77. **4. Specify how value of risk knowledge can be increased by and for small-scale fishers**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

78. **5. Moderate alerts generated by FEWER mobile before broadcasting outside of communities**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

79. **6. Participate and encourage participation of fishers in continued demand-led co-design of FEWER**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

80. **7. Promote the use of FEWER by fishers as normal practice**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

81. **8. Support FEWER fisheries extension and training of fishers**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

82. **9. Encourage fishers' sharing of local knowledge through FEWER**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

83. **10. Establish organisational and community FEWER networks**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

84. **11. Provide support for fishers through FEWER stewards and champions**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

85. **12. Agree to be referenced in any FEWER documents with clear requirements and actions**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

86. **13. Other responsibilities**

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Skip to "Thanks for assessing your FEWER Admin role!."

Coast Guard

Please assess the relevance of each of the following responsibilities to your organization's role in FEWER administration. Please add comments in the "Other" field.

87. **1. Provide inputs into FEWER deployment, operation and updates**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

88. **2. Provide data and information for inclusion into FEWER**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

89. **3. Store historic events for later FEWER retrieval to preserve institutional memory**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

90. **4. Specify how value of risk knowledge can be increased by and for small-scale fishers**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

91. **5. Moderate alerts generated by FEWER mobile before broadcasting outside of communities**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

92. **6. Incorporate FEWER into SAR procedures and training**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

93. **7. Provide situational content to include in FEWER training**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

94. **8. Provide chunked emergency preparation and response procedures to include in FEWER**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

95. **9. Provide telecommunications infrastructure for marine VHF**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

96. **10. Actively encourage proper use of marine VHF radio at sea**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

97. **11. Other responsibilities**

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Skip to "Thanks for assessing your FEWER Admin role!."

Technical Admin

Please assess the relevance of each of the following responsibilities to your organization's role in FEWER administration. Please add comments in the "Other" field.

98. **1. Subscribe to third party web hosting**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

99. **2. Subscribe to third party software services**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

100. **3. Subscribe to optional API services**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

101. **4. Configure national and regional CAP sources**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

102. **5. Program reconfiguration of external data for weather sources**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

103. **6. Configure monthly test of CAP alert creation**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

104. **7. Support the identification and/or resolution of FEWER bugs**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

105. **8. Other responsibilities**

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Skip to "Thanks for assessing your FEWER Admin role!."

Other FEWER Agency Admin

Please assess the relevance of each of the following responsibilities to your organization's role in FEWER administration. Please add comments in the "Other" field.

106. **1. Provide inputs into FEWER deployment, operation and updates**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

107. **2. Provide data and information for inclusion into FEWER**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

108. **3. Store historic events for later FEWER retrieval to preserve institutional memory**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

109. **4. Specify how value of risk knowledge can be increased by and for small-scale fishers**
Check all that apply.

- [ ] Yes
- [ ] No
- [ ] Other: _____

110. **5. Other responsibilities**

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Thanks for assessing your FEWER Admin role!

Your inputs will ensure a fit for purpose MOU between key agencies which together, will continue to reduce fishers' vulnerability to weather and climate related hazards.

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Appendix E.2. Notable Responses regarding Grenada's MoU

Table 29 Grenada MoU – Responsibilities of Interest

Administrator Type	Responsibility	Number of Representatives Disagreeing with Responsibility
Country Administrator	5. Moderate alerts generated by FEWER mobile before broadcasting outside of communities	1. 1 out of 3
	6. Promote the integration of FEWER into EAF, CCA and DRM	2. 1 out of 3
	8. Include FEWER in fisheries extension services and training	3. 1 out of 3
	11. Identify new sources of knowledge on climate and disaster risks and ensure they are configured in FEWER	4. 1 out of 3
	13. Include in training, situational learning that ties use of FEWER to its context and related tools such as PGIS	5. 2 out of 3
	14. Provide situational learning that ties use of FEWER to its context and related tools for inclusion in FEWER training materials	6. 1 out of 3
Coast Guard	9. Provide telecommunications infrastructure for marine VHF	1. 1 out of 2
Agency Admin – Met Services	3. Store historic events for later FEWER retrieval to preserve institutional memory	1. 1 out of 1
	5. Moderate alerts generated by FEWER mobile before broadcasting outside of communities	2. 1 out of 1
	9. Improve the inputs to EWS from automated marine sensors	3. 1 out of 1
	10. Provide training in climate service interpretation for fishers	4. 1 out of 1
	11. Provide situational content to include in FEWER training	5. 1 out of 1
Agency Administrator – Disaster Management Agency	1. Specify how value of risk knowledge can be increased by and for small-scale fishers	1. 1 out of 1
	8. Provide inputs into FEWER deployment, operation and updates	1. 1 out of 1

	9. Provide data and information for inclusion into FEWER	2. 1 out of 1
	10. Store historic events for later FEWER retrieval to preserve institutional memory	3. 1 out of 1
	11. Conduct training and exercises to test FEWER functionality	4. 1 out of 1
	12. Provide situational content to include in FEWER training	5. 1 out of 1
	13. Provide chunked emergency preparation and response procedures to include in FEWER	6. 1 out of 1
	14. Include FEWER zero-rated messaging for emergency alerts and relief in existing and future negotiations with local telecommunication service providers	7. 1 out of 1

Appendix E.3. Notable Responses regarding Saint Lucia's MoU

Table 30 Saint Lucia MoU – Responsibilities of Interest

Administrator Type	Responsibility	Number of Representatives Disagreeing with Responsibility
Country Administrator	15. Other responsibilities	Provide some level of tech support to end users TBD. Feedback on further responsibility can be developed as time progresses.
Coast Guard	9. Provide telecommunications infrastructure for marine VHF	1. 1 out of 1 (NEMO)
	11. Other responsibilities	GENERAL SAFETY AT SEA
Agency Administrator – Disaster Management Agency	12. Provide situational content to include in FEWER training	1. 1 out of 1

Technical Administrator	1. Subscribe to third party web hosting	1. 1 out of 1
	2. Subscribe to third party software services	2. 1 out of 1
	3. Subscribe to optional API services	3. 1 out of 1

Appendix E.4. Notable Responses regarding St. Vincent and the Grenadines' MoU

Table 31 St. Vincent and the Grenadines MoU – Responsibilities of Interest

Administrator Type	Responsibility	Number of Representatives Disagreeing with Responsibility
Regional Administrator – CIMH	3. Store historic events for later FEWER retrieval to preserve institutional memory	1. 1 out of 1
	4. Specify how value of risk knowledge can be increased by and for small-scale fishers	2. 1 out of 1
	5. Moderate alerts generated by FEWER mobile before broadcasting outside of communities	3. 1 out of 1
	8. Provide training, research and investigations, and appropriate ICT services and advice to FEWER Parties	4. 1 out of 1
Regional Administrator – CDEMA	1. Provide inputs into FEWER deployment, operation and updates	1. 1 out of 1
	4. Specify how value of risk knowledge can be increased by and for small-scale fishers	2. 1 out of 1
	7. Mitigate, via FEWER, the immediate consequences of disasters	3. 1 out of 1
Technical Administrator	1. Subscribe to third party web hosting	1. 1 out of 1

Appendix F. Training Assessment Tool

Appendix F.1. Introduction

In accordance with the January 31 2017 contract to "develop, test and deploy an information and communications (ICT)-based Early Warning and Emergency Response System (EWERS) for fishers, including the respective system e-services, and to conduct the requisite training in the use and administration of the system", a training impact assessment tool has been prepared. This tool uses the Kirkpatrick Model (1955)[7] to frame the impact of the Fisheries Early Warning and Emergency Response (FEWER) training workshops. It recognizes four (4) related dimensions of training impact measurement:

(i) reaction
(ii) learning
(iii) behaviour
(iv) results.

Within the project timeline, assessment was deliberately constrained to a measurement of learners' **reactions**, as well as their immediate **learning** of the content knowledge shared during face-to-face demonstrations and workshops. Beyond the timeline of the project, learner's change in **behaviour** will be assessed by monitoring their application of relevant knowledge and skills in their daily operations. In the long term, **results** will provide a higher-level review of FEWER training through comparison with baseline results or with a set of success indicators for the project.

[7] https://www.kirkpatrickpartners.com/Our-Philosophy

Appendix F.2. Assessment of Reaction

In the Kirkpatrick Model (2018), reaction refers to "the degree to which participants found the training favorable, engaging and relevant to their jobs". This dimension of assessment is used to gauge the initial reaction of participants to training. It is intended to highlight a personal attitude or psychological response from the training participant with regard to: the quality of the venue, facilities, facilitator, delivery, available resources etc.

In the case of the FEWER training assessment, reaction is used to assess the overall delivery of the face to face workshops: FEWER training, mobile phone tips, trainers, venue and refreshments. Participants are asked to pair each component with a distinguishable level of satisfaction on a Likert scale, for example: very good, good, acceptable, not good and terrible as shown in Table 32 for fishers and Table 33 for administrators.

Table 32 Fisher's Reaction Survey

How were these aspects of FEWER training**?**	Very good 😍	Good ☺	Acceptable 😐	Not good 😕	Terrible ☹
1. FEWER training					
2. mobile phone tips					
3. trainers					
4. venue					
5. refreshments					

Table 33 Administrator's Reaction Survey

You found that:	Strongly agree 😍	Agree ☺	Neutral 😐	Disagree 😕	Strongly disagree ☹
1. The objectives were clear					
2. The content and detail were appropriate					
3. Scenarios were relevant to your role in FEWER					
4. The hands-on activities helped consolidate understanding of FEWER and its operations					
5. The trainers were effective					
6. The venue was suitable					
7. Break and lunch catering were adequate					

Appendix F.3. Assessment of Learning

Learning, in the Kirkpatrick Model, is a dimension of assessment used to measure information retention. It is directly related to the instructional content provided to learner-participants. As introductory FEWER training focuses primarily on an orientation to the mobile application and the web-based dashboard, as appropriate, learners are asked to identify and describe very basic features, concepts and functions.

All instructional content for introductory FEWER training is deliberately aligned to the stated objectives for each target audience. These objectives are necessarily lower-order and therefore do not go beyond the scope of "remembering" and "understanding" (Bloom's Revised Taxonomy of Learning, 2001)[8]. Learning, that is to say, "the degree to which participants acquire the intended knowledge, skills, attitude, confidence and commitment based on their participation in the training", is reviewed via the questionnaire segments shown in Table 34 for fishers and Table 35 for administrators. Learning of FEWER-specific content is tracked mostly in quantifiable terms.

Table 34 Fisher's Learning Questionnaire

Your understanding is that **FEWER**:		**Yes**	**No**
1.	meets all fishers' needs in bad weather or at sea		
2.	reduces risks from bad weather at sea		
3.	operates with national systems that help keep fishers safe		
4.	works fully on all mobile devices that fishers use at sea or on land		
5.	needs cell service or WiFi to send or receive information		

Table 35 Administrator's Learning Questionnaire

FEWER is intended to:		**Yes**	**No**
1.	meet all fishers' EW & ER needs associated with weather and climate		
2.	reduce fishers' risks from weather- and climate-related hazards		
3.	operate within the national Disaster Risk Management framework		
4.	provide all capabilities on all mobile devices that fishers use at land and sea		

[8] Anderson, L., Krathwohl, D., & Bloom, B. (2001). A taxonomy for learning, teaching and assessing: a revision of Bloom's taxonomy of educational objectives. New York: Longman.

Matching activities, shown in Table 36 for fishers and Table 37 for administrators, is used to determine how many participants select the correct answers versus how many do not at the time of training. This is noteworthy as responses are received almost immediately after each workshop.

Table 36 Fisher's Matching Activity

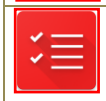
Please draw lines from each FEWER **icon** to its **module** name		
Icon	**Module**	
	LEK	*Every day, record things to reduce risk at sea*
	Messaging	*Every day, keep in touch with others for safety*
	Weather	*Every day check weather and if it's bad, share*
	Alerts	*When an emergency is coming, send alerts*
	Emergency Contacts	*In emergencies use up-to-date emergency contacts*
	Emergency Procedures	*In emergencies know what to do*
	Damage Reporting	*When you suffer losses or damage, create a report*
	Missing Persons	*When a fisher goes missing, broadcast to help recover*

Table 37 Administrator's Matching Activity

Which FEWER modules would be used to:							
1. upload a video on safety at sea for FEWER fishers							
2. broadcast to fishers that a threatening weather system has unexpectedly developed in the north							
3. update the phone number for the Coast Guard							
4. view marine artefacts recorded by fishers in 2018							
5. analyze the average cost of losses reported by fishers on account of last year's hurricanes							
6. alter the wave height threshold for FEWER to automatically indicate the need for fishers' caution							
7. prepare a report for the Minister on missing							

fishers rescued with the assistance of FEWER							

Without additional follow-up or regular testing, measurement of actual learning retention remains superficial.

Appendix F.4. Assessment of Behaviour

Behaviour, in the Kirkpatrick Model, is the assessment dimension used to assess the degree to which participants apply what they learned during training when they are back on the job. In the case of FEWER, this is tied to a qualitative assessment to be delivered every three months over a period of a year. At the end of the year, the four (4) quarterly reports are to be examined for behaviour changes and trends. The qualitative assessment is a review of the user's performance and is completed in collaboration with an ICT steward or other designated party. Of interest are answers to questions such as:

1. To what extent does the user readily engage with FEWER?
2. How often does this interaction take place?
3. To what extent is the user able to use FEWER to locate relevant information in response to common work-related tasks or queries?

As a measure of performance, the association of the average scores and rankings of familiarity and fluency are shown in Table 38. The statements of performance seen in the review instruments, shown in Table 39, Table 40 and Table 41, are to be used to gauge the instrumental as well as the informational competence of the user. Instrumental competence is defined as the ability of the user to operate hardware or software directly associated with the FEWER application. Informational competence is defined as the ability of the user to interact with the FEWER application in a knowledgeable manner. The statements of performance are derived from the features of FEWER as outlined in the relevant user manuals. Note that these are nominal statements which can be revised or added to by the administrators of the assessment tool, particularly as FEWER is updated and extended over the years.

The qualitative statements of performance are grouped according to the categories of familiarity, shown Table 39, and fluency performance ratings, shown in Table 40. The familiarity performance statements assess the degree to which the user is familiar with a feature or task that can be performed using FEWER. The fluency performance statements assess the extent to which the user can confidently execute tasks using FEWER for job-related activities. On each of these categories, an average score is calculated over all applicable statements.

Table 38 Ranking of Familiarity & Fluency

Score	Familiarity Ranking	Fluency Ranking
0	No familiarity	No fluency
1	Low level of familiarity	Low level of fluency
2	Average level of familiarity	Average level of fluency
3	High level of familiarity	High level of fluency

In addition to these qualitative statements of performance targeted towards the administrators, there are quantitative statements of performance deduced from data on fishers' interaction with FEWER. This FEWER generated data, as shown in Table 41, is converted into statements of performance. For example, if there are a number of community alerts created, then it can be derived that a specific number of fishers are using the Alerts module to create alerts. When this exceeds the baseline figure, it is regarded as a notable statement of performance.

Performance Report – Qualitative

Country:

Administered by:

Organisation: Name:

Date of Assessment:

Select the administrator type:	☐ Global Administrator (GA)	☐ Regional Reviewer (RR)	☐ Country Administrator (CA)
	☐ Technical Administrator (TA)	☐ Agency Administrator (AA)	☐ Coast Guard (CG)

Complete the following grid in collaboration with the administrator at the end of every 3-month period.

Table 39 Familiarity Performance Rating for Qualitative Statements of Performance

Goal of Familiarity Performance Tracking: *1) To what extent has the administrator physically interacted with FEWER and to do what?*

Administrator Type	**General Statements of performance**	**Rate frequency of performance**				
		Daily	Weekly	Monthly	Never	N/A
RR, CA, AA, CG	Checks Alerts web dashboard for new messages	3	2	1	0	☐
AA, CG	Checks Alerts web dashboard for community alerts	3	2	1	0	☐
AA	Approves or dismisses pending community alerts on Alerts web dashboard	3	2	1	0	☐
CG	Checks Tracks web dashboard for new activity	3	2	1	0	☐
CG	Views Tracks web dashboard for details on any activity	3	2	1	0	☐
GA, RR, CA, AA	Downloads data from Missing Persons or Damage Reporting or Local Ecological Knowledge (LEK) or Alerts web dashboard for further analysis	3	2	1	0	☐
CA, TA, AA	Views Weather web dashboard for details on extracted weather reports	3	2	1	0	☐
	AVERAGE SCORE:					
Additional comments & relevant details from Supervisor						

Performance Report – Qualitative

Country:

Administered by:

Organisation: Name:

Date of Assessment:

Select the administrator type:	☐ Global Administrator (GA)	☐ Regional Reviewer (RR)	☐ Country Administrator (CA)
	☐ Technical Administrator (TA)	☐ Agency Administrator (AA)	☐ Coast Guard (CG)

Table 40 Fluency Performance Rating for Qualitative Statements of Performance

Goals of Fluency Performance Tracking:

1) *To what extent has the administrator been able to locate relevant information in FEWER for his work?*
2) *To what extent has the administrator been able to use information in FEWER to do his job?*
3) *To what extent has the administrator been able to ensure continued functioning of FEWER for this job?*

Administrator Type	**Specific Statements of performance**	**Rate the level of performance**				
		Easily	With Difficulty	Unable	Never	N/A
AA	Approves or dismisses pending community alerts on Alerts web dashboard	3	2	1	0	☐
AA	Generates CAP Alert using Alerts web dashboard	3	2	1	0	☐
AA	Updates CAP Alert using Alerts web dashboard	3	2	1	0	☐
AA	Cancels CAP Alert using Alerts web dashboard	3	2	1	0	☐
AA	Creates Community Alert group using Alerts web dashboard	3	2	1	0	☐
GA, RR, CA, AA, CG	Sorts data during search in Alerts web dashboard or Damage Reporting web dashboard or Local Ecological Knowledge (LEK) web dashboard or Missing Persons web dashboard	3	2	1	0	☐
AA	Creates Damage Reporting categories using Damage Reporting web dashboard	3	2	1	0	☐
TA	Updates Weather extractor file using Weather web dashboard	3	2	1	0	☐
AA, CG	Marks report as found using Missing Persons web dashboard	3	2	1	0	☐
CA, AA	Creates Local Ecological Knowledge (LEK) categories using LEK web dashboard	3	2	1	0	☐
	AVERAGE SCORE:					
Additional comments & relevant details from Supervisor						

Performance Report – Quantitative
Country:
Date of Assessment:

Complete the following grid at the end of every 3-month period.
This assessment will be completed by a Country Administrator who has access to all the required data via FEWER web dashboards for a specific country's implementation.

Table 41 Quantitative Statements of Performance

Goals of Usage Tracking: *1) How many times are fishers interacting with the application?* *2) What are fishers doing with the application?*			
FEWER Modules	**Related Events**	**Actual Figures**	**Baseline Usage**
Alerts	Number of community alerts created		1
Alerts	Number of community alerts rated		1
Damage Reporting	Number of damage reports created		1
Missing Persons	Number of missing persons created		1
Local Ecological Knowledge (LEK)	Number of LEK posts created		1

Appendix F.5. Assessment of Results

Results, in the Kirkpatrick Model, should allow a higher-level review of the training. In the case of FEWER, actual results can be expected to be compared to baseline results or a set of success indicators. For FEWER, an increase in networked agents facilitating information flow to help to reduce risks related to weather (short-term) and climate (long-term) in the fisheries sector is the expected result. This expected result is deconstructed into two questions to be able to gather the required information to assess the extent to which this result has been achieved:

1) Are users connected to a service that they did not have before?
2) Are users able to receive or communicate with other users in a useful way?

See Table 42 for the template statements to be used in the analysis.

This assessment will be completed by the Global Administrator and the Country Administrator who have access to all the required data via FEWER web dashboards and Google Play consoles for a specific country's implementation.

The user of this assessment tool will every 3 months collect information to provide answers to the following questions:

Table 42 Template Statements on Analysis of Results

Questions	**Template Statements on Successful Results**
Are users connected to a service that they did not have before FEWER?	*1)* The total number of installations on phones at the end of this period *2)* The number of installations on phones during this period compared to the last recorded period
Are users able to receive or communicate with other users in a useful way?	*1)* The total number of phones receiving alert messages during this period *2)* The total number of phones sending community alert messages during this period *3)* The total number of phones receiving viewing weather information (Weather module's home screen) during this period *4)* The total number of phones reporting a missing person during this period *5)* The total number of phones sending damage reports during this period *6)* The total number of phones sending Local Ecological Knowledge (LEK) reports during this period

Appendix F.6. Closing Remarks

In the case of FEWER, the Kirkpatrick Model (1955)[1] is particularly significant. It readily accommodates the operating constraints of this Information and Communication Technology for Development (ICT4D) intervention which introduces a supporting tool and service into the existing operations of emergency personnel and fishers.

Increased business value is associated with long term development plans and sustained support which often fall outside of project timelines and the scope of engagement. Indeed, this impact assessment framework is designed to be fully implemented over a period of reinforcement necessary for meaningful learning transfer, retention, behavioural change and results. It is reasonable to assume that there will be additional cycles of FEWER training building on the foundational content and that adequate accommodations will be made for impact assessment over an adequate observation cycle.

[1] https://www.kirkpatrickpartners.com/Our-Philosophy

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